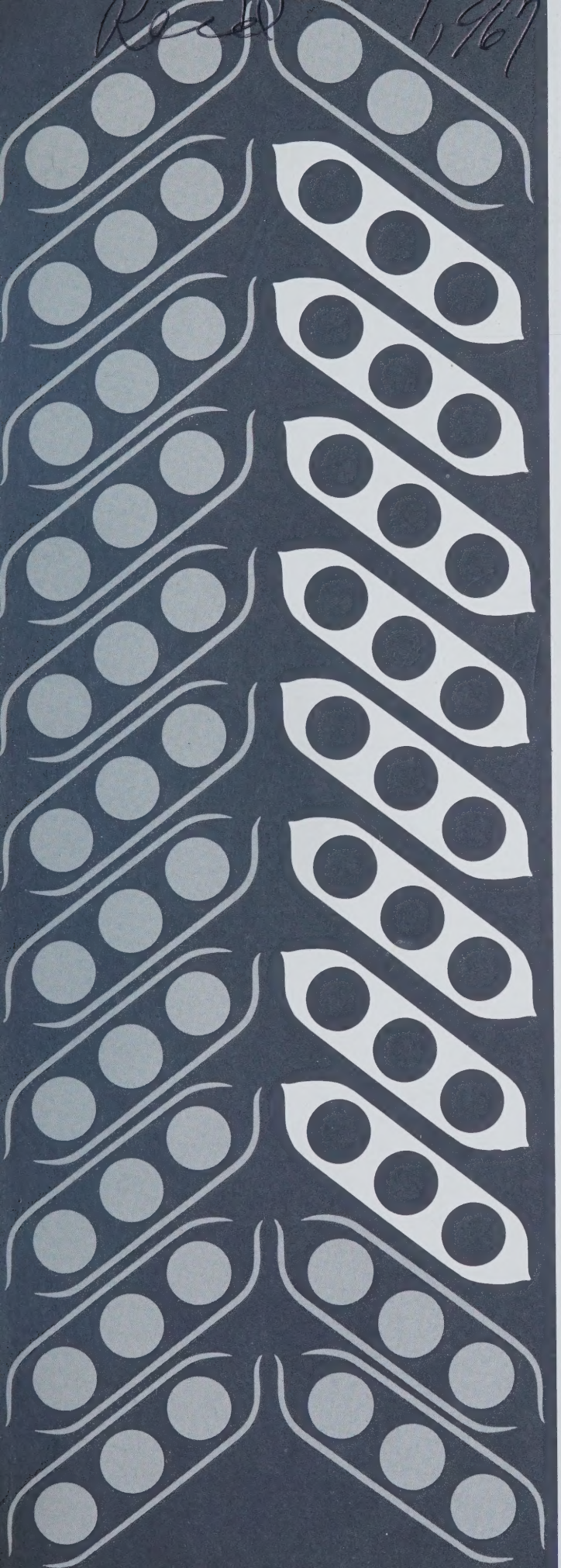
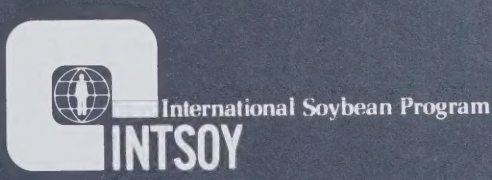


INTERNATIONAL SOYBEAN VARIETY EXPERIMENT

EIGHTH REPORT OF RESULTS 1980-1981

Joseph A. Jackobs, Charles A. Smyth, and Danny R. Erickson



International Agricultural Publications
INTSOY Series Number 26

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

International Soybean Variety Experiment

Eighth Report of Results
1980-1981

Joseph A. Jackobs, Charles A. Smyth,
and Danny R. Erickson

College of Agriculture
University of Illinois at Urbana-Champaign

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FOREWORD

The International Soybean Variety Evaluation Experiment (ISVEX) was initiated in 1973 as the backbone of the genetic improvement program of INTSOY. The trials provide cooperating scientists with the opportunity to have their elite breeding material evaluated globally and compared with cultivars from other countries. Information from past trials has added to the broad understanding of soybean genetic response to different environments. More important, scientists in more than 20 countries have identified cultivars from these trials to grow commercially. Many others have used this germplasm in their breeding programs.

The eighth report of results covers the years 1980 and 1981. The two trials reported in this publication were evaluated by cooperators in 64 different countries. Seeds and materials for the experiment were prepared and distributed by INTSOY at the request of the cooperating scientists. Each cooperator provided land, labor, fertilizer, and management necessary for the experiment. We express our thanks and appreciation to these scientists and their organizations. Also we wish to thank those organizations which assisted in the distribution of the trials. Notable among these are the Food and Agriculture Organization (FAO) and the U.S. Government.

INTSOY is focusing its efforts on the improvement of soybean production and utilization in the tropical and subtropical regions of the world where protein, calorie, and nutrition problems tend to be concentrated. The soybean cultivar trials discussed herein serve the global soybean community though the exchange of elite germplasm and the development and identification of cultivars for various agro-ecological regions.

We are pleased that improved methods of analysis, editing, and printing allow us to publish two years of results in one volume. We are also pleased to initiate with this publication the improved format which makes the report more concise. We are omitting the individual trial experimental correlation tables but have added an overall summary correlation table. We believe that this report will be easier to read, and, most important, it is timely.

Dr. Joseph A. Jackobs provides leadership to the ISVEX trial program. He has been ably assisted by Mr. Danny R. Erickson, Assistant Agronomist in trial preparation and dispatch; Mr. Jose Bravo, Assistant Agronomist in seed increase in Puerto Rico; and Mr. Charles A. Smyth, Assistant Statistician, who has been instrumental in improving the format and, with Ms. Bonnie J. Irwin, in implementing the new printing arrangement.

INTSOY is pleased to add this eighth report of results to the INTSOY publication series. We very much welcome your response.

—Harold E. Kauffman, Director
International Soybean Program (INTSOY)

INTERNATIONAL SOYBEAN VARIETY EXPERIMENT

Eighth Report of Results

This publication is the eighth report of results from the International Soybean Variety Evaluation Experiment (ISVEX), organized in 1973 by the International Soybean Program (INTSOY) of the University of Illinois at Urbana-Champaign and the University of Puerto Rico at Mayaguez, under a contract with the Agency for International Development, U. S. Department of State.

ISVEX is designed to

- test the adaptation of soybean varieties (cultivars) under a wide range of environmental conditions
- provide research workers with an opportunity to compare local and introduced cultivars
- provide a source of new germplasm which a cooperator can use directly or incorporate into a breeding program
- identify areas of the world that have the potential for soybean production
- evaluate the response of soybeans to different environments

MATERIALS AND METHODS

ISVEX Sites

In 1980 and 1981 a number of institutions and individuals around the world were contacted concerning their interest in conducting the ISVEX. Instructions for management and data collection were sent with the seed to scientists who agreed to participate in the ISVEX network. The soybean seed was packaged for individual row planting, and granular inoculant was provided for distribution in the row with the seed. The experiment was designed as a randomized complete block with four replications. Each cultivar was planted in a plot in each of the 4 blocks (replications). A plot consisted of four rows 5 m long and 60 cm apart. Nodule activity and abundance data were obtained from the border rows. All other data were obtained from the center two rows.

It was suggested in the instructions that a trial site be chosen which had a uniform crop history and where the soil was well drained. A soil analysis was recommended for determination of pH, organic matter, phosphorus, and potassium. It was recommended that an application of 25 kg/ha N, 25 kg/ha P, and 25 kg/ha K be broadcast and worked into the plot prior to planting.

Sufficient seed was provided to overplant approximately 75%. It was recommended that the plants be thinned soon after emergence to a stand of one plant per 5 cm.

Mechanical or chemical methods of weed control were suggested according to the facilities available to the cooperator. Chemicals were suggested for use in control of insects.

Cultivars

Cultivars entered in the Eighth ISVEX during 1980 and 1981 were selected for various traits, including agronomic performance, maturity group classification, seed availability, uniform seed quality, and adaptability. Cultivars in earlier trials which demonstrated consistent high yields were selected for introduction into the ISVEX trials. There were 51 cultivars entered in the Eighth ISVEX. The pedigrees of the soybean cultivars tested can be found in Table 1.

Thirty-four of the 51 cultivars were adapted to the tropics and subtropics. Of these 34, thirteen were selected and developed in these regions. Each year, an attempt is made to include a high proportion of cultivars from the tropics and subtropics.

AUTHORS: Joseph A. Jackobs, Professor; Charles A. Smyth, Assistant Statistician; and Danny R. Erickson, Assistant Agronomist; INTSOY, Department of Agronomy, University of Illinois, Urbana, Illinois, U.S.A.

The cultivars were divided into three groups according to their maturity group and were distributed among cooperators according to the environmental zone of the site. Later maturing cultivars were distributed in subtropical and tropical zones while earlier maturing cultivars were dispatched to more temperate areas. These three groups were designated A (tropical), B (subtropical), and C (temperate). The cultivar Williams was common to all three sets (see Table 2).

The ISVEX instructions indicated that the cooperator could substitute one or two local soybean cultivars for those which were supplied by INTSOY. A number of substitutions were made. The data on the performance of these cultivars are shown in Tables 11 to 187, which contain the analysis of data for each location.

Experiment Sites

The experiment sites were divided into 13 environmental zones which were defined by latitude and altitude. These zones were defined by each 10 increments in latitude from the equator, and by three altitude ranges: 0-500 m, 501-1000 m, and over 1000 m. The limits of each zone and the number of sites in each zone are shown in Table 3. Separating the trial sites by latitude permitted evaluation of cultivars under different conditions of daylength. Separation according to altitude permitted evaluation under different conditions of day- and night-time temperatures. There was some variation within each zone in temperature, moisture, and solar radiation.

Planting date for each site was determined by the environment. Plantings were made throughout the year. Also, many researchers and scientists are beginning to use ISVEX material in sequential cropping systems.

For the Eighth ISVEX, 387 trials were dispatched to 91 countries. Data were returned for 178 trials in 126 sites from 64 countries (Table 4). Figure 1 shows the location of the countries where trials were completed. Of the 64 countries, 25 were in Africa, 14 in Asia, 11 in South America, 4 in MesoAmerica, and 10 in Europe, the Middle East, North America and Oceania. The cultivars were evaluated under a wide range of environmental conditions. The northernmost site was at Piestany, Czechoslovakia (48°36'N, 17°49'E, 160 m) and the southernmost site was in Buenos Aires, Argentina (34°35'S, 68°29'W, 25 m). The highest site was located at Bumthang, Bhutan (27°N, 91°E, 2650 m) and the lowest site in Bissau, Guinea Bissau (12°N, 0°16'W, 0 m). Data were returned from 73 trials located between 20N and 20S latitudes.

Table 1. Pedigree and origin of soybean cultivars entered in the Eighth International Soybean Variety Evaluation Experiment (ISVEX) during 1980 and 1981

Cultivar	Maturity Group	Pedigree	Origin or Sponsor
Alamo	IX	D49-2491 × (P.I. 240664 × D49-2491)	Rio Farms Inc., and USDA, U.S.A.
Amcor	II	Amsoy 71 × Corsoy	Ohio Agr. Res. Devel. Center and USDA, U.S.A.
Bay	V	York × R62-550	Virginia AES and USDA, U.S.A.
Bossier	VII	Selection from Lee	Louisiana AES and USDA, U.S.A.
Braxton	VII	F59-1505 × [Bragg[3] × D60-7965]	Florida AES and USDA, U.S.A.
Calland	III	C1253 × Kent	Purdue University AES and USRSL, U.S.A.
Celest	V	P.I. 80837 × Delmar	Delaware AES, U.S.A.
Centennial	VI	D64-4636 × Tawny Pubescence Pickett 71 Type	Mississippi Agricultural and Forestry Experiment Station and USDA, U.S.A.
Century	II	Calland × Bonus	Purdue University AES, U.S.A.
Chippewa 64	I	(Chippewa × Blackhawk) × Chippewa[7]	Illinois AES and USRSL, U.S.A.
Cobb	VIII	F57-735 × D58-3358	Florida AES and USDA, U.S.A.

Continued

Table 1. Pedigree and origin of soybean cultivars entered in the Eighth International Soybean Variety Evaluation Experiment (ISVEX) during 1980 and 1981, continued

Cultivar	Maturity Group	Pedigree	Origin or Sponsor
Coles	I	Hark × [Provar × (Disoy × Magna)]	Iowa Agric. and Home Econ. Exp. Stn., Puerto Rico AES, and USDA, U.S.A.
Columbus	IV	C1069 × Clark	Kansas AES and USDA, U.S.A.
Corsoy 79	II	Corsoy^{6} × Lee 68	Illinois AES and USDA, U.S.A.
Crawford	IV	Williams × Columbus	Kansas AES and USDA, U.S.A.
Cumberland	III	Corsoy × Williams	Iowa Agric. and Home Econ. Exp. Stn, Puerto Rico AES, and USDA, U.S.A.
Davis	VI	[Roanoke × (Ogden × CNS)] × (Ralsoy × Ogden)	Arkansas AES and USRSL, U.S.A.
DeSoto	IV	[Wayne × (Clark × Adams)] × Columbus	Kansas AES and USDA, U.S.A.
Ecuador 1	N/A	Jupiter × F65-170	INIAP, Ecuador
Ecuador 2	N/A	Jupiter × F65-170	INIAP, Ecuador
Essex	V	Lee × S5-7075	Virginia AES and USDA, U.S.A.
Evans	0	Merit × Harosoy	Minnesota AES and USDA, U.S.A.
Forrest	V	Dyer × Bragg	Mississippi Agricultural and Forestry Experiment Station and USDA, U.S.A.
Foster	VIII&NT	Centennial × [Forrest × (Cobb × D68-216)]	Florida AES and USDA, U.S.A.
G 2120	N/A	Selection - Accession (No. 1039)	S. Shanmugasundaram, AVRDC, China (Taiwan)
Gail	VI	Hood × D60-9647	Texas AES and USDA, U.S.A.
Hardin	I	Corsoy^{3} × Cutler 71	Iowa Agric. and Home Econ. Exp. Stn., U.S.A.
Harlon	I	Blackhawk × Harosoy 63	Research Station, Harrow, Ontario
Hodgson 78	I	Composite selection from Hodgson and Merit	Minnesota AES and USDA, U.S.A.
Hutton	VIII	F55-822 × (Roanoke × CNS 4)	Florida AES and USDA, U.S.A.
ICA Caribe	N/A	Selection from BL-1-M	G. Bastidas, ICA, Colombia
ICA L-109	N/A	Hardee × (C. Hill × P.I. 274454)	G. Bastidas, ICA, Colombia
ICA L-125	N/A	ICA Pance × Hale 3	G. Bastidas, ICA, Colombia
ICA Tunia	N/A	Mandarin S4 ICA × Dortchsoy	G. Bastidas, ICA, Colombia
IGH 23	N/A	Selection from Jupiter × F65-170)	H. Paschal, Guyana/Puerto Rico
IGH 24	N/A	Selection from Jupiter × F65-170)	H. Paschal, Guyana/Puerto Rico
Improved Pelican	VIII	Tanloxi × P.I. 60406	Louisiana AES, U.S.A.
Jupiter	IX	D49-2491 × P.I. 240664	Florida AES and USDA, U.S.A.
Kent	IV	Lincoln × Ogden	Purdue University AES and USRSL, USA
McCall	00	M433 × Hark	Minnesota AES, U.S.A.
Pella	III	L66L-137[Wayne × L57-0034(Clark × Adams)] × Calland	Iowa Agric. and Home Econ. Exp. Stn. and Puerto Rico AES, U.S.A.
PK-73-94	N/A	UPSL 85 × Hardee	B. B. Singh, G. B. Pant University of Agriculture and Technology, India
Ransom	VII	(CN55-3843 × N55-2908) × D56-1185	Alabama AES and USDA, U.S.A.
SJ-2	N/A	N/A	A. NaLampang, Department of Agriculture, Thailand
UFV-1	VIII	D49-2491 × Improved Pelican (Vicoja Selection)	Universidad Federal de Vicosa, Brazil
UFV-1 (BP-2)	N/A	N/A	H. Paschal, INTSOY, Puerto Rico
Ware	IV	P.I. 80837 × V63-76	Virginia AES and USDA, U.S.A.
Will	III	Williams^{6} × (Clark^{6} × T117)	Illinois AES and USDA, U.S.A.
Williams	III	Wayne × L57-0034	Illinois AES and USRSL, U.S.A.
Williams 79	III	Williams^{6} × Lee 68	Illinois AES and USRSL, U.S.A.
York	V	Dorman × Hood	Virginia AES and USDA, U.S.A.

Table 2. Soybean cultivars by group and year grown in the Eighth International Soybean Variety Evaluation Experiment (1980-1981)

Group A Tropical		Group B Subtropical		Group C Temperate	
1980	1981	1980	1981	1980	1981
Alamo	Alamo	Alamo	Alamo		
					Amcor
		Bay	Bay		
Bossier	Bossier	Bossier	Bossier		
			Braxton		
				Calland	
		Celest	Celest	Celest	Celest
		Centennial	Centennial		
					Century
Cobb	Cobb				
				Coles	
				Columbia	
				Corsoy 79	Corsoy 79
			Crawford		Crawford
				Cumberland	Cumberland
Davis	Davis	Davis	Davis		
		DeSoto	DeSoto	DeSoto	DeSoto
Ecuador 1					
	Ecuador 2				
			Essex		Essex
					Evans
		Forrest			
Foster	Foster	Foster			
G 2120	G 2120	G 2120			
		Gail	Gail		
					Hardin
				Harlon	Harlon
					Hodgson 78
Hutton					
ICA Caribe	ICA Caribe				
ICA L-109					
ICA L-125					
ICA Tunia	ICA Tunia				
IGH 23	IGH 23				
IGH 24	IGH 24				
Improved Pelican	Improved Pelican				
Jupiter	Jupiter				
				Kent	Kent
				McCall	McCall
					Pella
		PK-73-94	PK-73-74		
Ransom	Ransom				
SJ-2	SJ-2				
UFV-1	UFV-1	UFV-1	UFV-1		
UFV-1 (BP-2)	UFV-1 (BP-2)				
		Ware	Ware		
				Will	Will
Williams		Williams		Williams	
Williams 79			Williams 79	Williams 79	Williams 79
				York	

Figure 1. Countries from which data were returned in the Eighth International Soybean Variety Evaluation Experiment.

AFRICA
Algeria
Burundi
Cameroon
Egypt
Ethiopia
Gabon
Ghana
Guinea-Bissau
Lesotho
Liberia
Libya
Madagascar
Mali
Mauritius
Morocco
Mozambique
Rwanda
Somalia
Sudan
Tanzania
Upper Volta
Zaire
Zambia
Zimbabwe

ASIA
Bangladesh
Bhutan
Brunei
Burma
China (Taiwan)
Fiji Islands
India
Indonesia
Iraq
Korea
Malaysia
Nepal
New Caledonia
Pakistan
Philippines
Thailand
Saudi Arabia
Sri Lanka
Turkey
Vietnam

NORTH AMERICA
United States

SOUTH AMERICA
Argentina
Bolivia
Brazil
Chile
Colombia
Ecuador
French Guiana
Paraguay
Peru
Surinam
Uruguay

EUROPE
Azores (Portugal)
Czechoslovakia
Portugal

MESO AMERICA
Costa Rica
Guatemala
Mexico
Panama
Puerto Rico

Table 3. Description of environmental zones in the Eighth International Soybean Variety Evaluation Experiment conducted during 1980 and 1981

Zone	Latitude	Elevation (m)	Number of Sites
I	0°-10°59′	≤500	32
II	0°-10°59′	501-1,000	2
III	0°-10°59′	>1,000	11
IV	11°-20°59′	≤500	23
V	11°-20°59′	501-1,000	8
VI	11°-20°59′	>1,000	8
VII	21°-30°59′	≤500	21
VIII	21°-30°59′	501-1,000	2
IX	21°-30°59′	>1,000	4
X	31°-40°59′	≤500	21
XI	31°-40°59′	501-1,000	7
XII	31°-40°59′	>1,000	1
XIII	≥41°	≥0	3

The symbols >, ≥, and ≤ refer to greater than, greater than or equal to, and less than or equal to, respectively.

TABLE 4. Geographical description of sites where the Eighth International Soybean Variety Evaluation Experiment was conducted and from which useful data were returned to INTSOY

Country	Site	Trial No.	Latitude	Longitude	Elevation (m)	Zone
Algeria	Khemis Miliana	900 307	36°15′N	2°14′E	289	10
Argentina	Univ. of Buenos Aires	923	34°35′S	68°29′W	25	10
Azores	Vinha Brava-Terceira	306	38°40′N	27°13′W	160	7
	Santa Maria	812	36°58′N	25°08′W	195	10
Bangladesh	Reg. Agr. Res. Stn. Ishurdi, Pabna	214	24°00′N	89°00′E	7	7
	Mymensingh, Ina Farms	724	24°42′N	90°24′E	18	7
	Feni Noakhali	235	23°00′N	91°25′E	10	7
Bhutan	Bumthang	913	27°00′N	91°00′E	2650	9
Bolivia	Est. Exp. Agr. de Saavadra	121	17°14′S	63°10′W	320	4
	Est. Exp. Gran Chaco	116	21°57′S	63°39′W	600	8
Brazil	Jarieprojecta-Sao Raimundo	132	1°00′S	52°00′W	2	1
Brunei	Biray Res. Stn.	127	4°00′N	114°05′E	15	1
Burma	Heho Seed Farm	716	20°45′N	90°50′E	1140	6
Burundi	Mosso	218	4°00′S	30°04′E	1260	3
Cameroon	Dschang	109 704	5°27′N	10°05′E	1450	3
Chile	Pirque, R. M.	346	33°40′S	70°36′W	654	11
	Est. Exp. Univ. Catolica	927	33°40′S	70°36′W	656	11
	Est. Exp. La Platina	924	33°34′S	70°38′W	625	11
China (Taiwan)	AVRDC Shanhua	739 221	23°07′N	120°17′E	80	7
Colombia	ICA Est. Exp. Palmira	735	3°30′N	76°32′W	1080	3
	C.N.I.A. Turipana-Cerete Cordo	736 783	9°00′N	76°00′W	13	1
	C.R.I.A. Nataima, Espinal, Tolima	832	4°12′N	74°56′W	481	1
Costa Rica	E.J.N. Canas	173	10°48′N	85°08′W	10	1
	Parrita	174	9°35′N	84°30′W	80	1
	Abangares-Guanacaste	749 750	10°10′N	85°10′W	50	1
Czechoslovakia	Piestany	310	48°36′N	17°49′E	160	13
Ecuador	Boliche Est. Exp. Los Rios	728 729 148	2°15′S	79°38′W	13	1
	Agrolandia, Santo Domingo	193 759	1°00′S	79°00′W	40	1
Egypt	Shalakan, Cairo	311	30°00′N	30°00′E	30	7
	Sids	806 201	29°00′N	31°00′E	48	7
	Sakha	301	31°00′N	31°00′E	7	10
	Field Crop Res. Inst. Sakha	805	31°00′N	31°00′E	40	10
	Nubaria	910	31°00′N	30°00′E	30	10
	Bahteem	911	30°28′N	31°11′W	24	7
	Gemmeza	302	30°00′N	30°00′E	75	7
Ethiopia	Awassa Agr. Res. Stn.	816	7°00′N	38°15′E	1700	3
	Jimma Agr. Res. Stn. Melko	212	7°47′N	36°00′E	1750	3
	Debre Zeit Jr. Agr. Center	814	8°55′N	37°00′E	1900	3
Fiji	Legalega Res. Stn.	110 112	17°45′S	177°28′E	20	4
	Naiselesele, Bua	111	16°05′S	178°40′E	10	4
French Guiana	Cabassou, Cayenne	711	4°50′N	52°18′W	7	10

Continued

TABLE 4. Geographical description of sites where the Eighth International Soybean Variety Evaluation Experiment was conducted and from which useful data were returned to INTSOY, continued

Country	Site	Trial No.	Latitude	Longitude	Elevation (m)	Zone
Gabon	Lebamba	172	2°03′S	12°00′E	195	1
	Ntoum	706	0°20′S	9°45′E	18	1
		102				
	Angone I Oyem	769	1°30′N	11°30′W	600	1
Ghana	MIM Brong-Ahafo	126	7°00′N	2°00′W	250	1
	Kwadaso	701	16°41′N	1°42′W	270	1
		150				
	Kumasi	709	6°43′N	1°36′W	293	1
Guatemala	Teculutan	723	15°00′N	89°45′W	200	4
Guinea Bissau	Contuboel	184	12°00′N	17°00′W	500	4
	Granja Prabis Bissau	129	12°00′N	16°00′W	0	4
India	Hissar	206	29°10′N	75°46′E	215	7
Indonesia	Medan	710	3°32′N	98°39′E	27	1
		125				
	Sukamandi	708	6°20′S	107°39′E	15	1
Iraq	Baghdad	909	33°20′N	44°24′E	34	10
	Mosul	313	36°43′N	43°09′E	223	10
Korea	Suweon	917	37°17′N	129°00′E	37	10
		348				
Lesotho	Maseru	932	29°18′S	27°30′W	1510	9
Liberia	Suakoko, Bong County	718	6°58′N	9°30′W	162	1
		160				
Libya	Tajoura Exp. Stn.	800	32°11′N	13°17′E	11	10
		905				
Madagascar	Mandoto, Amparihy	166	19°38′S	46°30′E	900	5
		167				
		227				
		228				
		765				
Malaysia	Sungai Buloh Selangor	717	3°12′N	101°35′E	30	1
Mali	Agron. Res. Stn. Sotuba	763	12°38′N	8°00′W	325	4
Mauritius	Reduit	211	20°00′S	57°00′E	316	4
		773				
Mexico	Campo Agr. Auxiliar Tancasneque	756	22°33′N	98°31′W	40	7
	Cayal Campeche, Camp.	757	19°51′N	90°33′W	8	4
	Tapachula, Chiapas	799	14°31′N	93°10′W	9	4
Morocco	Slimania Berkane	921	34°55′N	2°01′W	85	10
		328				
	Ksar El Kebir- Ghedira	916	35°08′N	6°03′W	10	10
	Rabat	906	33°59′N	6°52′W	25	10
Mozambique	Maputo	834	15°04′S	36°30′W	670	5
Nepal	Rampur	342	27°40′N	84°19′E	228	7
	Agronomy Farm, Khumaltar	330	27°40′N	85°20′E	1360	9
		802				
	Parwanipur Naryani Zone	804	27°12′N	84°20′E	100	7
New Caledonia	Plaine, Bourail	238	21°00′S	105°00′E	0	7
Pakistan	N.A.R.C. Islambad	810	34°00′N	73°00′E	550	11
	SW Lahore, Multan Rd.	941	31°19′N	74°05′E	225	10
		942				
		943				
		625				

Continued

TABLE 4. Geographical description of sites where the Eighth International Soybean Variety Evaluation Experiment was conducted and from which useful data were returned to INTSOY, continued

Country	Site	Trial No.	Latitude	Longitude	Elevation (m)	Zone
	Agr. Res. Inst.	808	25°02'N	63°38'E	19	7
	Tandojam Mingora District, Swat	324	34°46'N	72°21'E	890	11
		912				
Panama	Rio Hato	762	9°10'N	79°22'W	1	1
Paraguay	Caacupe	825	25°24'S	56°07'W	228	7
		234				
		176				
		199				
Peru	Huarangopampa-Bagua	161	5°40'S	90°00'W	500	1
	La Molina Est. Exp.	182	12°05'S	76°57'W	251	4
	Pichanaki	705	11°15'S	75°15'W	550	5
	Tulumayo Est. Exp. Tingo Maria	707	9°00'S	75°00'W	600	2
	Marcavelica Sullana- Piura	742	4°51'S	80°43'W	80	1
Philippines	Isabela State Univ. Cabagan	782	17°39'N	121°45'E	61	4
	BPI Economic Garden	722	14°10'N	121°15'E	15	4
	Los Banos, Laguna	774	14°13'N	121°15'E	23	4
		114				
	Botanique Philippines Inc. Laga	123	7°00'N	125°00'E	18	1
Portugal	Quinta do Marques-Oeiras	902	38°45'N	9°00'W	10	10
		317				
Puerto Rico	Isabela	743	18°00'N	40°00'W	128	4
		819				
		158				
Rwanda	Rubona	703	2°29'S	29°46'E	1650	3
Saudi Arabia	Unayzah, Gassim	224	26°04'N	43°59'E	724	8
Somalia	Afgoi, Somalia	120	3°30'N	46°35'E	50	1
Sri Lanka	Maha-Illuppallama	712	8°05'N	83°28'E	138	1
		997				
		124				
		130				
	CARI, Gannoruwa	715	7°01'N	80°00'E	457	1
		122				
	Thirunelvely Agr. Res. Stn.	714	9°06'S	80°03'E	1	1
Sudan	Gezira Res. Stn. Wad Medani	727	14°24'N	33°29'E	400	4
		151				
	Abu-Naama	726	12°44'N	34°07'E	435	4
	Kadugli Res. Stn.	784	11°00'N	29°43'E	501	5
		753				
		835				
	Halima Exp. Stn., Wau	747	7°00'N	28°00'E	450	1
Surinam	Paramaribo-Zuid	998	5°30'N	55°25'W	20	1
		999				
Tanzania	Zanzibar	144	6°00'S	38°00'E	30	1
Thailand	Phraputthabat Field Crop Exp. Stn.	165	14°47'N	100°50'E	95	4
	Suwan Farm Pakchong	763	14°30'N	101°30'E	300	4
	Nakhonrachsima	162				
Turkey	Adapazari	319	30°25'N	40°47'E	30	7
	Adana	217	34°00'N	35°00'E	123	10
	Carsamba	321	41°11'N	36°45'E	35	13
	Konya	907	37°52'N	32°30'E	1028	12
		320				
		322				

Continued

TABLE 4. Geographical description of sites where the Eighth International Soybean Variety Evaluation Experiment was conducted and from which useful data were returned to INTSOY, continued

Country	Site	Trial No.	Latitude	Longitude	Elevation (m)	Zone
	Menemen-Izmir	650	38°35'N	27°04'E	10	10
		651				
	Samsun	908	41°20'N	37°30'E	38	13
United States	Weslaco, Texas	823	26°00'N	97°00'W	30	7
		824				
		230				
	INTSOY Urbana, Illinois	345	40°07'N	88°13'W	222	10
Upper Volta	Saria	155	12°16'N	2°09'W	300	4
	Vallee Du Kou	719	11°04'N	4°02'W	300	4
		147				
Uruguay	Treinta y Tres	233	33°00'S	52°00'W	30	10
Vietnam	Thanhtri, Hanoi	1	21°01'N	105°48'E	5	7
	Exp. Farm Stn., Univ. of Cantho	84	10°05'N	105°47'E	3	1
		198				
Zaire	Mulungu-Tshibinda	242	2°19'S	28°45'E	2055	3
	Bukavu	1003	2°18'S	28°47'E	1331	3
		775				
		108				
	Mbujimayi, Kasai Oriental	767	6°00'S	23°40'E	700	2
Zambia	Magoye Reg. Res. Stn.	777	16°00'S	27°36'E	1018	6
		183				
	Msekera Reg. Res. Stn.	177	13°39'S	32°34'E	1025	6
	Copperbelt Reg. Res. Stn.	197	12°38'S	28°10'E	1243	6
		779				
	Unza Farm Lusaka	778	15°24'S	28°19'E	1154	6
Zimbabwe	Harare Res. Stn.	826	17°48'S	31°03'E	1506	6
		349				

DATA COLLECTED

Cooperators reported the following agronomic characteristics for each plot:

Yield: Weight in grams of clean, dry grain from 5 m of the two center rows (harvest area = 6 m^2).

Days to flower: Days from date of emergence to date when 50% of the plants had flowered.

Days to maturity: Days from date of emergence to date when 95% of the pods were ripe.

Nodule number: Number of nodules on roots of ten plants at the time when the first flowers appeared and a second count of nodules three weeks after first flowering.

Nodule weight: Weight in grams of nodules on roots of ten plants at the time when the first flowers appeared and again three weeks after first flowering.

Plant height at maturity: Height in centimeters from the ground surface to the top of the main stem at maturity.

Lodging score: Estimated rate of lodged or down plants on a scale of 1 (all erect) to 5 (all down) as observed at time of maturity.

Shattering scores: Estimated rating of the amount of shattering of seed from the pods on a scale of 1 (no seed shattered) to 5 (over 50% shattered) at the time of maturity.

Plants harvested: Total number of plants harvested.

Pods per plant: Mean number of pods per plant estimated from ten plants.

Seed weight: Weight in grams of 100 randomly selected seeds from the dried, cleaned grain.

Quality of seed: Estimated rating of seed quality after harvest. Considered were the amount of wrinkling, defective seed coats, off-color seeds, and moldy or rotten seeds. A scale of 1 (very good quality) to 5 (very poor quality) was used.

Seed germination: Number of seeds germinated out of 100 randomly selected seeds.

Data were also compiled for protein and oil contents of harvested beans. The analyses were

made from a seed sample of each cultivar which was composited across replications at each trial site by the cooperator. These samples were returned to INTSOY for analysis. Protein and oil contents were determined on the dry weight basis by a near-infrared light reflectance instrument in the Department of Agronomy at the University of Illinois.

STATISTICAL ANALYSIS OF DATA

Statistics were computed for variables from each experiment site. These included, for each agronomic characteristic, the mean, standard error of a cultivar mean, coefficient of variation, and the least significant difference (LSD) of cultivar means at the 5% level. Correlation coefficients were computed between the agronomic characteristics measured for each site and an analysis of variance (randomized complete block) was performed for complete data. The 1981 data analyses were slightly more sophisticated than the 1980 analyses, as some missing data were allowed. The results of these individual analyses were reported to the cooperator(s) and a portion of these results are reproduced below (Tables 11 - 187).

The performance of each cultivar over the sites in the experiment was characterized. The data were adjusted to remove the effect of location and then combined over locations within cultivar groups (Groups A, B, and C). The adjusted value of each cultivar-location combination for each agronomic characteristic was calculated from the observed value at a given location multiplied by the ratio of the mean value of check cultivars over all locations to the mean value of check cultivars at a given location.

The adjusted values have had the effect of environment (as measured by the check cultivars) removed. Consequently, the mean of the adjusted values of the checks at each location will be the same as the mean of the check cultivars over all locations. The adjusted values were used to

- give equal weight to each location in determining the relative performance of cultivars over all locations
- permit the comparison of cultivar means where the cultivars are grown at a different number of locations
- determine the relative stability of the performance of a cultivar over a wide range of environments

The standard deviation of the adjusted values of a cultivar at all locations is a measure of the interaction of a cultivar with location because the effect of location has been removed. Variation in the adjusted values of a cultivar is due to its failure to perform the same (in relation to the checks) at all locations. The magnitude of the standard deviations for the various characters varies widely because they reflect the units of measurement. To make comparisons between cultivars easier, a stability index was calculated as the ratio of the standard deviation of the adjusted values of a cultivar over all locations to the mean standard deviation of all cultivars over all locations. Hence, the average stability index of all cultivars equals 1.

The influence of latitude, altitude, and environment (as measured by the average mean yield of the checks) on the relative performance of cultivars in terms of adjusted yield, days to flowering, and days to maturity was determined through multiple regression. The partial regression coefficients of the adjusted values for yield, days to flower, and days to maturity on the independent factors are a measure of the interaction of the cultivar in question with the independent factor. In other words, a partial regression coefficient exists because the cultivar in question did not respond the same as the checks did on average. Multiple regression equations were calculated separately for Groups A, B, and C. To further explore the results of the multiple regression analysis, the association between the partial regression coefficients and average days to maturity was calculated. This correlation measures the level of association of the cultivar characterization by days to maturity with the interaction of checks and cultivars given by the partial regression coefficients.

RESULTS AND DISCUSSION

Summary mean values for parameters observed in experiments and stability of cultivars during 1980 and 1981 are presented in Tables 5 and 6. The data in Table 5 summarize the performance characteristics of the 51 cultivars which were

included in 8 or more trials. Data for a cultivar included in more than one group-year are presented on consecutive lines. In this manner, all information on a cultivar is at one location. Days to maturity is the most important characteristic in determining where a cultivar can be grown successfully. For this reason, the cultivars have been placed in the order of their maturity from latest to earliest. When comparing cultivars, only data from within a group-year should be used.

Eight year-cultivar combinations were included in both Group A (tropical) and Group B (subtropical) trials. The mean adjusted yield of the cultivars in Group A (1,854 kg/ha) was somewhat lower than that of Group B (1,967 kg/ha). The difference (−113 kg/ha) was greater than in a similar comparison in 1979 (+12 kg/ha). The difference in days to flower was pronounced, 36.2 days in Group A and 53.7 days in Group B. The difference in days to maturity was still greater, 100.2 days in Group A and 121.1 days in Group B. The plants in Group A were shorter (40.8 cm) than those in Group B (60.5 cm). Average seed weight was greater in Group A (16.3 g/100) than in Group B (15.0 g/100). Another set of 8 year-cultivar combinations was included in both Group B (subtropical) and Group C (temperate), and hence, similar comparisons can be made. The mean yield at the Group B locations was substantially lower (1,803.4 kg/ha) than at the Group C locations (2,381.5 kg/ha). Group B flowered in 37.4 days while Group C did not flower until 57.2 days. A somewhat larger difference occurred between the two groups in days to maturity. Group B matured in 106.8 days and Group C matured in 133.4 days. The difference in height was rather large. Group B plants averaged 50.1 cm while Group C plants averaged 83.7 cm. Seed weight in Group B (17.8 g/100) was somewhat greater than in Group C (17.0 g/100). The results from these trials are very similar to those found in the 1979 ISVEX trials. The data from these trials indicate that the yield potential of soybeans may be somewhat lower in the tropics and subtropics than in the temperate regions, but only by a margin of about 32 percent. A similar comparison in the 1979 ISVEX results showed only a 12 percent advantage of Group C yields over those of Group B. Soybeans take the shortest time to flower and mature near the equator and the time increases with distance from the equator. Weight per seed was greater in the tropics than in the subtropics and greater in the subtropics than in the temperate zone.

In addition to the average performance of a cultivar, it is important to know if its relative performance is consistent in relation to other cultivars or if it varies widely from one location

Table 5. Performance characteristics[a] of soybean cultivars

Cultivar	Year and Group[a]	Yield (kg/ha)	Days to Flower	Days to Maturity	Plant Height (cm)	Lodging[b]	Shattering[c]	Pod Height (cm)	Weight per 100 seeds (g)	Seed Quality[d]	Percent Protein	Percent Oil
ICA Caribe	80 A	1575	41.7	117.0	82.9	2.6	1.4	12.0	13.0	2.3	46.1	17.8
	81 A	1765	43.5	118.8	87.6	2.2	1.3	14.4	13.4	2.5	39.8	15.9
ICA L-125	80 A	1733	42.5	116.2	84.7	2.5	1.2	13.1	13.9	2.3	42.8	20.4
ICA L-109	80 A	1650	47.1	116.1	62.8	1.9	1.4	12.4	12.5	2.9	44.9	18.5
IGH 24	80 A	1732	49.0	115.8	72.0	2.0	1.2	14.5	14.7	2.5	38.1	18.8
	81 A	1899	50.3	118.8	71.8	1.6	1.0	14.3	15.9	2.3	32.4	17.5
IGH 23	80 A	1788	47.0	110.7	75.4	2.2	1.5	16.5	16.0	2.3	41.8	17.6
	81 A	1920	46.6	112.0	73.0	1.8	1.1	16.2	16.5	2.4	42.5	18.3
Jupiter	80 A[e]	1858	39.3	109.8	66.0	1.8	1.3	12.6	17.0	2.6	43.2	21.2
	81 A[e]	1915	47.1	112.0	66.1	1.6	1.1	15.1	17.8	2.5	38.5	19.6
Ecuador 2	81 A	1878	39.0	106.9	57.5	1.4	1.1	13.1	17.3	2.7	43.7	21.0
Alamo	80 A	1827	44.2	106.4	51.2	1.9	1.3	11.7	15.4	2.1	43.9	20.8
	81 A	1952	45.0	105.4	51.2	1.6	1.1	12.8	15.5	2.2	37.6	18.7
	80 B	2144	66.7	128.6	78.1	1.5	1.2	18.3	14.4	1.9	44.5	18.5
	81 B	1765	65.0	120.7	68.1	1.6	1.0	15.1	13.9	2.6	33.7	16.6

Continued

Table 5. Performance characteristics[a] of soybean cultivars, continued

Cultivar	Year and Group[a]	Yield (kg/ha)	Days to Flower	Days to Maturity	Plant Height (cm)	Lodging[b]	Shattering[c]	Pod Height (cm)	Weight per 100 seeds (g)	Seed Quality[d]	Percent Protein	Percent Oil
UFV-1	80 A[e]	1997	37.6	105.4	44.5	1.4	1.3	9.7	15.5	2.1	44.4	20.4
	81 A[e]	2081	37.4	105.6	44.2	1.2	1.0	11.1	15.4	2.2	39.5	18.9
	80 B	2579	59.7	134.4	75.6	1.7	1.1	15.4	14.3	2.2	44.3	18.7
	81 B	1971	56.2	125.4	65.5	1.5	1.1	14.0	15.2	2.2	34.5	16.5
G 2120	80 A	1570	50.0	105.0	94.7	3.3	1.9	13.2	8.2	2.7	45.4	15.8
	81 A	1727	50.6	105.2	88.9	2.9	1.4	14.3	8.2	2.5	39.8	15.3
	80 B	1773	72.3	128.7	127.0	3.2	1.3	19.2	6.4	1.9	45.6	14.9
UFV-1 (BP-2)	80 A	1951	34.6	104.0	78.4	2.1	1.3	12.8	15.1	2.2	41.0	20.3
	81 A	1958	35.5	104.9	78.1	1.8	1.1	13.4	15.2	2.3	40.0	20.3
ICA Tunia	80 A	1943	34.4	104.0	58.1	1.5	1.3	11.1	18.6	2.2	41.4	20.2
	81 A	2184	35.0	104.0	60.3	1.3	1.0	12.5	19.1	2.4	39.9	20.3
Ecuador 1	80 A	1662	41.9	103.2	63.6	1.9	1.3	11.6	17.9	2.2	43.3	20.4
SJ-2	80 A	1764	38.1	101.8	70.8	2.6	1.6	13.3	14.0	2.2	43.2	20.3
	81 A	1930	37.5	101.5	70.9	2.2	1.0	13.0	14.3	2.2	41.7	20.6
Cobb	80 A	1793	30.9	101.0	38.8	1.4	1.4	8.0	17.5	2.3	39.2	20.9
	81 A	1652	29.5	91.4	37.3	1.4	1.4	7.5	18.6	2.6	34.2	19.5
Improved Pelican	80 A	1783	38.7	99.7	71.9	2.0	1.4	12.0	14.2	2.3	44.0	21.5
	81 A	1944	37.8	99.2	72.3	1.9	1.2	13.7	14.5	2.2	39.2	19.1
	81 B	1468	52.7	117.6	79.5	1.5	1.3	14.4	13.8	2.6	34.1	16.1
Davis	80 A[e]	1874	32.4	95.8	39.1	1.3	1.3	8.7	17.3	2.3	42.7	21.1
	81 A[e]	1701	35.4	97.8	33.3	1.1	1.1	8.1	18.2	2.3	37.2	19.0
	80 B[e]	2143	47.8	117.0	58.0	1.4	1.3	11.1	16.8	2.5	42.6	19.9
	81 B[e]	1691	47.6	115.7	45.4	1.2	1.3	7.9	16.0	2.3	41.7	20.9
Hutton	80 A	1606	29.3	95.6	34.7	1.3	1.3	8.0	19.5	2.7	40.8	20.4
Ransom	80 A	1618	29.0	93.7	35.0	1.4	1.3	7.4	18.4	2.8	38.2	21.5
	81 A	1673	28.5	95.7	31.2	1.1	1.1	6.9	18.7	2.9	29.1	17.2
Bossier	80 A[e]	1645	29.4	93.1	33.2	1.4	1.4	6.8	16.9	2.5	43.6	20.9
	81 A	1579	28.8	94.3	32.2	1.2	1.0	7.5	17.5	2.6	39.1	18.5
	80 B	2060	43.7	119.9	49.0	1.7	1.1	9.0	16.2	2.6	43.2	19.7
Foster	80 A	1662	29.0	92.0	31.5	1.3	1.3	7.8	16.0	2.6	40.9	20.7
	81 A	1735	28.8	92.9	31.6	1.1	1.0	8.1	16.9	2.6	38.6	19.8
	80 B	2154	44.4	115.8	47.6	1.5	1.2	10.5	14.8	2.6	43.1	19.9
	81 B	1292	41.9	110.0	45.8	1.3	1.2	9.3	14.9	2.3	42.2	20.6
Gail	81 A	1954	30.6	90.6	34.6	1.1	1.2	7.7	19.8	2.0	26.2	13.8
	80 B	1873	41.3	107.7	45.8	1.3	1.3	9.3	19.4	3.0	43.9	18.2
	81 B	1866	43.2	107.8	44.8	1.1	1.4	8.7	17.7	1.9	44.0	20.1
Williams 79	81 A[e]	1609	27.7	88.1	41.6	1.2	1.1	8.9	19.3	2.3	37.6	19.2
	81 B[e]	1347	36.7	105.2	47.3	1.2	1.6	7.8	17.5	2.2	43.3	21.1
	80 C	1927	41.3	115.7	78.1	1.4	1.0	12.3	16.6	3.7	39.0	18.1
	81 C[e]	2552	49.3	126.0	77.7	1.6	1.1	11.6	17.4	2.1	42.6	19.8
Williams	80 A[e]	1690	27.7	87.3	43.8	1.4	1.3	8.4	18.8	2.3	43.1	21.7
	80 B[e]	2098	34.4	100.3	52.0	1.3	1.2	7.9	18.7	2.6	42.2	21.1
	80 C[e]	1938	41.6	116.0	79.0	1.3	1.1	12.5	16.5	3.6	41.7	20.5
PK-73-94	80 B	2216	48.4	122.7	60.7	1.5	1.3	13.2	14.9	2.5	42.6	19.0
	81 B	1710	47.3	111.2	51.5	1.4	1.3	10.0	14.2	2.2	33.6	16.2
Centennial	80 B	2172	42.3	112.3	53.4	1.4	1.2	11.7	15.8	2.4	43.2	19.5
	81 B	1554	42.5	104.8	44.6	1.2	1.4	8.4	15.2	2.0	43.8	20.1
Celest	80 B[e]	1993	44.1	110.8	53.7	1.2	1.1	12.2	19.1	2.9	38.1	18.2
	81 B	1854	42.4	111.3	49.9	1.1	1.2	12.4	17.9	2.0	41.6	20.8
	80 C	1792	64.6	138.4	90.8	1.8	1.2	18.2	18.0		37.5	16.9
	81 C	2633	80.9	151.1	92.6	2.8	1.1	16.6	19.3	2.2	33.8	15.2

Continued

Table 5. Performance characteristics[a] of soybean cultivars, continued

Cultivar	Year and Group[a]	Yield (kg/ha)	Days to Flower	Days to Maturity	Plant Height (cm)	Lodging[b]	Shattering[c]	Pod Height (cm)	Weight per 100 seeds (g)	Seed Quality[d]	Percent Protein	Percent Oil
Forrest	80 B	2247	40.9	110.4	54.6	1.2	1.1	12.0	13.9	2.3	41.2	20.3
Essex	81 B	1723	39.8	113.2	42.2	1.1	1.4	8.6	16.1	2.0	43.3	20.6
	81 C	2701	72.6	149.0	74.8	1.7	1.2	13.5	15.5	2.4	36.0	15.8
Bay	80 B	2096	40.4	110.1	52.4	1.3	1.3	10.7	19.0	3.3	41.2	21.2
	81 B	1451	41.6	113.3	46.3	1.2	1.4	8.4	18.3	2.4	40.7	22.1
Braxton	81 B[e]	1584	44.2	109.8	53.8	1.2	1.3	11.3	17.1	2.3	37.5	18.9
Ware	80 B	1336	35.6	105.1	36.6	1.2	1.2	7.8	21.9	3.2	42.1	19.2
	81 B	1164	36.6	103.1	36.8	1.3	1.6	7.8	20.7	2.2	34.8	16.3
Crawford	81 B[e]	1862	39.3	104.6	52.6	1.2	1.1	8.2	16.3	1.9	42.6	21.1
	81 C[e]	2629	57.4	136.4	90.5	1.8	1.1	12.9	16.3	2.4	41.9	20.0
DeSoto	80 B	1965	34.6	100.6	53.9	1.2	1.2	8.6	18.8	2.8	41.5	20.7
	81 B	1585	37.9	108.4	49.2	1.2	1.6	8.1	17.8	2.6	41.6	20.8
	80 C	2072	40.9	120.3	83.3	1.4	1.2	11.9	16.3	4.0	41.6	19.1
	81 C	2785	50.4	130.8	80.9	1.6	1.2	11.0	16.9	2.2	41.9	19.7
York	80 C	1513	61.2	141.2	88.4	1.6	1.2	14.4	17.4	4.2	33.7	14.9
Columbus	80 C	1748	47.4	130.5	89.7	1.6	1.2	16.0	15.5	4.6	38.2	17.9
Kent	80 C	1858	46.3	128.7	82.8	1.4	1.2	14.0	17.0	5.0	38.7	17.7
	81 C	2597	55.2	136.4	83.8	1.7	1.2	13.3	17.6	2.6	42.9	19.8
Pella	81 C	2553	45.4	123.5	73.3	1.4	1.3	11.6	19.2	2.6	40.8	20.4
Calland	80 C	2017	39.4	120.5	83.7	1.4	1.2	12.8	17.6	5.1	41.5	19.3
Century	81 C	2562	45.3	119.2	67.5	1.6	1.3	11.0	16.7	2.7	42.8	20.0
Amcor	81 C	2627	46.2	118.5	73.4	1.6	1.2	10.3	16.7	2.8	39.4	21.0
Cumberland	80 C	1940	41.0	116.2	74.2	1.4	1.1	10.8	17.3	3.8	30.6	19.3
	81 C	2694	54.5	126.2	81.6	1.7	1.2	10.0	18.7	2.4	41.7	20.6
Will	80 C	1899	40.3	113.0	67.1	1.4	1.2	11.1	15.9	3.8	38.8	19.3
	81 C	2617	47.6	118.0	66.1	1.5	1.1	10.6	17.3	2.2	42.8	20.0
Hardin	81 C	1961	44.9	112.8	61.6	1.4	1.2	8.7	15.7	2.7	41.6	20.8
Corsoy 79	80 C[e]	1862	36.6	107.6	67.8	1.4	1.2	9.5	14.8	4.2	35.0	17.8
	81 C[e]	2249	44.4	111.6	68.0	1.5	1.3	10.3	15.3	2.7	41.8	19.8
Hodgson 78	81 C[e]	2100	40.6	108.8	62.4	1.3	1.2	10.3	16.5	2.3	41.4	21.0
Coles	80 C	1859	35.5	106.4	70.7	1.3	1.3	9.9	17.0	5.0	38.6	18.4
Chippewa 64	80 C	1648	35.7	103.8	67.6	1.3	1.1	11.0	14.9	4.5	38.3	18.9
Harlon	80 C	1697	35.0	100.7	64.9	1.3	1.5	10.8	16.6	4.0	37.5	19.7
	81 C	1866	40.6	106.6	61.3	1.6	2.3	9.2	17.8	3.7	42.0	21.0
Evans	80 C[e]	1658	33.4	98.7	55.5	1.2	1.2	8.8	15.3	4.4	37.4	20.7
	81 C	1869	38.5	103.8	52.6	1.3	1.2	8.1	15.6	2.6	40.4	21.3
McCall	80 C[e]	1590	31.6	95.8	53.1	1.2	1.4	8.7	15.0	4.0	37.2	20.4
	81 C	1771	39.0	101.3	52.2	1.4	1.2	8.8	15.1	2.7	40.8	20.4

Note: Values given are the mean of the adjusted values (y) where:
y = observed value × (mean of checks over all locations/mean of checks at a given location)

[a] Groups A, B, and C were sent to tropical, semitropical, and temperate zone locations, respectively. Comparisons should be made only within each group.

[b] Estimated rate of lodged or down plants on a scale of 1 (all erect) to 5 (all down) as observed at maturity.

[c] Estimated rate of the amount of shattering of seeds from pods at maturity on a scale of 1 (no shattering) to 5 (over 50% shattered).

[d] Estimated rating of seed quality after harvest considering the amount of wrinkling, defective seed coats, off-colored seed, and moldy or rotten seed on a scale of 1 (very good quality) to 5 (very poor quality).

[e] Check cultivar in group.

to another. The standard deviation of the adjusted value for a cultivar across all trials in a group-year is a measure of consistency because it measures deviations from the average of the check cultivars. If the standard deviation is large, the relative performance of a cultivar varies widely from one location to another. A stability index has been calculated (Table 6) to put all characteristics on the same scale. It is only valid to compare indices within group-years.

In Group A, the stability index for all characters but two of ICA Caribe was more than 1.0. In 1979, in the Seventh ISVEX, all the stability indices for this cultivar were greater than 1.0. This means that its performance varied widely in relation to the average performance of all cultivars. Also in 1979, the stability indices of ICA Tunia indicated that its performance was stable. The same can be said for its performance in 1980 and 1981. SJ-2 was relatively consistent in 1979 and again in 1980 and 1981. Bossier performed consistently in Group A in 1979 but erratically in Group B. In 1980 and 1981, it performed consistently in both Groups A and B. The similarity of the stability indices of cultivars in 1979, 1980, and 1981 suggest that they indicate the interaction between cultivar and environment.

The correlations between agronomic characters were calculated in each experiment. These are not shown, but the results have been summarized. Table 7 has been prepared to show the frequency of positive and negative correlations for each combination of characters. If the ratio between the two values is between .5 and 2.0, there is little indication that the two characters tend to be associated, positively or negatively. In other words, this subjective criterion indicates an association whenever there are more than twice as many positive to negative or negative to positive values. Only associations that were observed in both 1980 and 1981 will be considered. Yield was positively associated with number of plants harvested and seed weight and negatively associated with seed quality. Days to flower was positively associated with days to maturity, plant height, pod height, plants harvested, and lodging. It was negatively associated with seed size. Days to maturity has the same relation with other characteristics. Lodging likewise had these relationships. Shattering was negatively associated with yield in 1980 but not in 1981. There were no associations among plants harvested, pod height, seed weight and seed quality. The correlations among plant characteristics in the trials are a description of the association of characters in existing cultivars. This does not necessarily indicate that observed associations cannot be broken by plant breeders as they develop cultivars with desired combinations of characters.

The differential responses of cultivars to latitude, altitude, and general yield level were determined by calculating the multiple regression of adjusted yield, days to flowering, and days to maturity on these independent variables. The partial regression coefficients are given in Table 8. Since days to maturity is the most distinctive

Table 6. Relative stability[a] of cultivars

Cultivar	Year and Group[a]	Yield	Days to Flower	Days to Maturity	Plant Height	Lodging	Shattering[c]	Pod Height	Seed Weight	Seed Quality	Protein	Oil
ICA Caribe	80 A	1.29	1.56	1.84	1.96	2.01	1.76	1.49	1.69	1.29	.40	.49
	81 A	1.59	2.20	2.18	2.95	1.89	1.75	1.43	1.43	1.37	1.25	1.02
ICA L-125	80 A	1.40	1.02	1.65	1.81	1.58	.71	1.15	.76	.87	.28	.77
ICA L-109	80 A	.93	3.20	1.38	1.43	.93	1.05	1.07	1.07	.99	.39	.55
IGH 24	80 A	1.31	1.37	1.27	.98	1.37	.76	1.49	1.65	1.53	2.35	1.89
	81 A	1.38	1.37	1.33	.92	.87	.86	1.28	1.44	1.14	1.27	1.37
IGH 23	80 A	1.20	.98	.89	.98	1.35	1.38	2.02	1.17	.77	2.42	1.66
	81 A	1.67	1.08	.78	1.04	1.14	.99	1.31	1.05	.78	.85	.77
Jupiter	80 A[b]	.92	.88	.83	.58	.67	.65	.87	.95	.85	.36	.77
	81 A[b]	.96	1.28	1.08	.55	.70	.51	.87	.97	.80	.91	.93
Ecuador 2	81 A	.95	.79	.79	1.03	.92	.58	.99	1.61	1.65	.20	.29

Continued

Table 6. Relative stability[a] of cultivars, continued

Cultivar	Year and Group[a]	Yield	Days to Flower	Days to Maturity	Plant Height	Lodging	Shattering[c]	Pod Height	Seed Weight	Seed Quality	Protein	Oil
Alamo	80 A	.94	1.05	.75	.48	1.40	.76	1.09	.76	.84	.39	.77
	81 A	.99	.93	.74	.70	1.29	.50	1.46	1.31	.79	1.10	1.08
	80 B	1.62	2.09	1.53	1.56	1.15	.48	2.46	1.31	.95	.51	.84
	81 B	1.48	2.24	1.43	1.22	1.87	.51	2.31	1.39	1.38	2.21	1.91
UFV-1	80 A[b]	.73	.67	.90	.37	.43	.60	.86	.71	.75	.36	.53
	81 A[b]	.91	.62	.97	.54	.32	.36	.90	.80	.52	.97	.91
	80 B	2.42	1.66	1.51	1.55	1.37	1.29	1.63	.90	1.02	.49	.64
	81 B	1.84	2.01	1.94	.96	2.05	.51	2.18	1.14	1.40	2.22	1.86
G 2120	80 A	1.06	1.70	1.27	2.95	2.06	2.73	1.64	1.39	1.86	.36	.46
	81 A	1.13	1.39	1.11	1.64	2.69	2.22	1.32	1.27	1.24	1.15	.93
	80 B	.71	2.22	1.31	2.61	3.36	1.08	1.56	.68	.86	.49	.96
UFV-1 (BP2)	80 A	.90	.56	.90	1.48	1.16	.54	.92	.89	.85	1.73	1.37
	81 A	.84	.65	.87	1.96	1.43	1.04	1.08	.86	.92	.73	.70
ICA Tunia	80 A	.65	.52	.67	.80	.71	.66	.87	.96	.84	1.59	1.30
	81 A	1.09	.94	.94	.97	.48	.82	.95	.89	.74	.81	.81
Ecuador 1	80 A	1.37	.68	.60	.67	.89	.92	.95	.83	.76	.63	1.09
SJ-2	80 A	.89	.83	.74	1.08	1.42	1.90	1.43	.87	.79	.39	.54
	81 A	.78	.66	.77	1.05	2.14	.84	.76	.80	.80	.22	.34
Cobb	80 A	.88	1.16	1.74	.61	.47	1.30	.61	.81	1.06	1.89	1.59
	81 A	.87	1.11	1.43	.87	.42	.54	1.19	.89	1.17	1.01	1.12
Improved Pelican	80 A	1.41	.71	.61	1.30	1.16	1.40	.91	.80	.85	.32	.50
	81 A	.85	.86	1.07	1.63	1.44	3.01	1.45	.74	.76	1.04	.99
	81 B	1.07	1.43	1.45	2.12	1.77	1.12	2.01	1.19	1.53	2.36	1.93
Davis	80 A[b]	.54	.50	.68	.49	.41	.67	.59	.96	.80	.36	.57
	81 A[b]	.82	.61	.75	.60	.54	.83	.72	.93	.74	1.08	1.08
	80 B[b]	.64	.65	.51	.77	.78	.66	.74	1.09	.90	.69	.74
	81 B[b]	.74	.93	.95	.77	.67	.70	.65	.69	.47	.30	.51
Hutton	80 A	.84	.56	.98	.71	.37	.50	.56	.85	1.11	2.15	1.65
Ransom	80 A	.86	.64	.80	.57	1.15	.38	.58	1.19	1.17	2.27	1.96
	81 A	.82	.95	.91	.50	.38	1.25	.79	.63	1.31	1.38	1.60
Bossier	80 A	.83	.84	.88	.51	.48	.77	.41	.67	1.03	.51	.64
	81 A	.70	.92	.85	.56	.98	.68	.56	.84	1.28	1.15	1.08
	80 B[b]	.66	.93	1.04	.73	1.02	.98	.67	.89	.87	.90	.56
Foster	80 A	1.01	.69	.78	.52	.43	.86	.74	.91	1.07	1.50	1.25
	81 A	.74	1.06	.79	.51	.48	.48	.59	.95	1.09	.91	.90
	80 B	1.25	.92	1.20	.82	.54	.66	.91	1.03	.89	.55	.67
	81 B	.63	.97	1.01	.96	1.00	.59	.79	1.11	1.23	.31	.47
Gail	81 A	1.07	.55	.60	.23	.49	1.23	.49	.63	1.13	1.89	1.98
	80 B	.91	.49	.68	.65	.52	1.08	.85	.86	1.30	1.02	.70
	81 B	1.24	.63	1.11	1.05	.36	1.51	1.09	.91	.78	.29	.58
Williams 79	81 A[b]	.83	1.02	1.04	.74	.40	.50	.86	.95	.77	1.09	1.09
	81 B[b]	.42	.89	.61	.67	.61	1.19	.44	.87	.52	.29	.51
	80 C	1.00	.70	.93	.69	.71	.91	.88	.72	.80	1.10	1.05
	81 C[b]	.76	.91	.54	.52	.54	.50	1.03	.82	.38	.54	1.05
Williams	80 A[b]	1.04	.88	.84	.72	.55	.70	.74	1.09	.93	.36	.65
	80 B[b]	.87	1.07	.79	1.02	.98	1.02	.71	.87	.95	.88	.84
	80 C[b]	.79	.66	.99	.68	.90	.81	.87	.83	.63	.22	.49
PK-73-94	80 B	1.46	1.36	1.66	.60	1.20	1.78	.82	1.03	.91	.44	.84
	81 B	.87	1.22	.83	.78	1.83	.59	.78	1.09	.82	2.19	1.86
Centennial	80 B	.75	.49	.91	.60	.99	.66	1.29	.66	1.00	.93	1.13
	81 B	.72	.77	1.08	.98	.39	1.33	.85	.83	.66	.22	.49

Continued

Table 6. Relative stability[a] of cultivars, continued

Cultivar	Year and Group[a]	Yield	Days to Flower	Days to Maturity	Plant Height	Lodging	Shattering[c]	Pod Height	Seed Weight	Seed Quality	Protein	Oil
Celest	80 B[b]	.50	.37	.59	.38	.77	1.19	.42	1.03	.82	4.10	2.90
	81 B	1.11	1.22	.72	1.28	.60	.70	.97	.97	1.00	.38	.53
	80 C	1.77	3.14	2.48	1.82	2.22	1.21	2.69	1.87		1.33	1.18
	81 C	1.91	1.95	2.07	.99	2.28	.44	1.48	1.30	2.06	4.42	2.74
Forrest	80 B	.88	.55	.48	.64	.48	.83	.64	.89	1.03	.94	.83
Essex	81 B	1.01	.26	.87	.81	.55	1.82	.81	1.22	.83	.26	.51
	81 C	1.09	2.06	1.92	.85	1.14	1.24	1.66	1.20	1.21	4.37	2.62
Bay	80 B	.50	.42	.84	1.07	.61	.92	.69	1.16	1.35	.97	1.15
	81 B	1.00	.49	.86	1.14	.57	1.08	.86	.96	1.25	.39	.58
Braxton	81 B[b]	1.23	.76	.99	.73	1.21	.90	.56	.80	1.19	1.63	1.45
Ware	80 B	1.14	.84	1.15	1.22	.68	1.26	.72	1.75	1.41	1.07	1.19
	81 B	.85	.83	.52	1.03	1.20	1.10	.81	1.09	.99	2.26	1.87
Crawford	81 B[b]	.92	.74	.74	.76	.52	.53	.31	.61	.69	.30	.46
	81 C[b]	1.14	.86	.66	1.09	.63	.54	.90	1.13	.78	.65	.87
DeSoto	80 B	.69	.94	.80	.79	.56	1.12	.90	.85	.73	1.02	1.01
	81 B	.87	.60	.89	.74	.79	1.84	.57	1.13	1.24	.38	.49
	80 C	1.48	.92	1.03	1.65	1.06	1.00	.86	.99	.96	.22	.45
	81 C	1.10	.88	.99	.68	.60	.54	.84	1.13	.74	.56	.86
York	80 C	1.61	2.49	1.77	2.11	1.35	.72	1.89	2.06	1.38	1.58	1.34
Columbus	80 C	1.29	1.47	1.53	1.25	1.52	.84	1.92	1.56	1.39	1.29	1.20
Kent	80 C	1.20	1.13	1.26	1.11	.90	.77	1.30	1.32	1.13	1.13	1.03
	81 C	1.24	1.04	.78	.81	.86	2.50	.94	1.11	.75	.38	.57
Pella	81 C	1.04	.61	.82	.51	.88	1.06	1.08	1.10	1.31	.63	.93
Calland	80 C	1.27	.66	1.39	1.18	1.18	.71	.75	.96	.83	.27	.37
Century	81 C	.82	.78	.89	.75	1.65	1.09	.96	.91	1.26	.46	.83
Amcor	81 C	.90	.64	.86	1.00	.68	.27	.90	.81	1.06	.54	.85
Cumberland	80 C	.80	.69	.79	.92	.75	.84	.56	.99	.99	1.09	1.10
	81 C	.47	1.86	.94	3.46	1.60	.85	1.14	1.04	.75	.74	1.19
Will	80 C	.79	.79	.95	.78	.95	1.14	.71	.95	.99	1.10	1.09
	81 C	.80	.75	.64	.93	.88	.61	.89	1.06	.72	.47	.70
Hardin	81 C	.87	1.56	.82	.97	.73	.39	.74	.78	.73	.47	.64
Corsoy 79	80 C[b]	.43	.52	.49	.53	.73	.67	.30	.43	.64	1.44	1.41
	81 C[b]	1.02	.54	.77	.69	.67	.62	1.21	.62	.61	.52	.76
Hodgson 78	81 C[b]	.98	.44	.91	.84	.33	.47	.85	.34	.52	.38	.46
Coles	80 C	1.03	.70	.57	.72	.94	1.03	.79	.86	1.15	1.11	1.08
Chippewa 64	80 C	.72	.47	.34	.71	.87	.72	.92	.52	1.09	1.08	1.02
Harlon	80 C	.74	.43	.47	.70	.66	2.35	.52	.77	.97	1.07	1.09
	81 C	.67	.70	1.21	.85	1.18	4.31	.62	2.02	1.47	.97	.73
Evans	80 C[b]	.51	.63	.42	.54	.56	.83	.36	.71	.62	1.03	1.09
	81 C	1.10	.70	.80	.91	.75	.78	.84	.73	1.28	.48	.66
McCall	80 C[b]	.56	.61	.58	.62	.71	1.46	.65	.46	.58	.95	1.01
	81 C	1.08	.71	1.39	1.13	1.59	.79	.92	.90	1.36	.42	.55

Note: The relative stability index is a/b where:
a = standard deviation of the adjusted values of a cultivar over all locations with a group
[b] = average standard deviation of all cultivars over all locations within a group
a Groups A, B, and C were sent to tropical, semitropical, and temperate zone locations, respectively. Comparisons should be made only within each group.
[b]Check cultivar in group.

Table 7. Number of positive and negative correlations among adjusted values of plant characteristics of cultivars within locations. The value in the upper left-hand side of an intersect is the number of positive correlations and the number in the lower right-hand side is the number of negative correlations. The values in the lower left-hand side of the table are for 1980 and those in the upper right-hand side of the table are for 1981

	Yield	Days to Flower	Days to Maturity	Plant Height	Lodging	Shattering	Plants Harvested	Pod Height	100 Seed Weight	Seed Quality
Yield		43 / 30	48 / 26	59 / 18	40 / 26	23 / 26	53 / 20	47 / 23	56 / 21	21 / 47
Days to Flower	46 / 43		63 / 6	68 / 1	53 / 14	18 / 25	25 / 40	55 / 8	14 / 36	25 / 38
Days to Maturity	47 / 39	80 / 3		71 / 2	51 / 12	22 / 21	15 / 39	60 / 6	37 / 33	44 / 26
Plant Height	58 / 36	83 / 5	83 / 2		63 / 3	23 / 24	42 / 7	61 / 3	20 / 54	35 / 32
Lodging	31 / 44	64 / 7	61 / 7	71 / 4		20 / 24	38 / 26	50 / 11	22 / 44	32 / 29
Shattering	13 / 42	26 / 20	23 / 27	33 / 22	35 / 17		28 / 15	25 / 20	27 / 23	27 / 24
Plants Harvested	70 / 17	24 / 58	18 / 64	39 / 47	28 / 42	26 / 31		49 / 19	24 / 47	35 / 26
Pod Height	51 / 31	69 / 6	67 / 8	71 / 2	62 / 6	31 / 22	45 / 29		24 / 45	30 / 31
100 Seed Weight	69 / 18	15 / 66	21 / 57	19 / 70	15 / 59	22 / 32	40 / 43	14 / 64		40 / 31
Seed Quality	14 / 61	33 / 38	36 / 34	39 / 37	33 / 31	27 / 18	33 / 39	29 / 40	41 / 28	

difference between cultivars, the cultivars within each group have been ranked according to maturity. The average adjusted days to maturity are given. The correlation between each set of partial regression coefficients and days to maturity is given at the bottom of each column.

The correlations between partial regression coefficients (1980 and 1981) for yield on degrees latitude and adjusted days to maturity were Group A, −.628** and −.328, Group B, −.681** and −.225, and Group C +.547* and .077. The negative correlations indicate that the relative yield of late cultivars was lower with increasing distance from the equator in both the tropics and subtropics, though the opposite was true in the temperate zone. The influence of altitude on the relative yield of late cultivars was not apparent in the tropics and subtropics but there was a highly significant reduction in relative yield of late maturing cultivars at higher altitudes in the temperate regions. The late maturing cultivars in the tropics ranked relatively higher where the

environment was favorable (sites with high average yields) but the opposite was true in the subtropics and temperate zone.

Many other correlations between partial regression coefficients and adjusted days to maturity within a group-year were statistically significant, but in only 8 out of 36 combinations were the coefficients either all positive or all negative not only in 1980 and 1981 but also in 1979 and contained at least one that was significant. These correlations indicated:

- In the tropics, the relative yield of late maturing cultivars declined with increased altitude.
- In the temperate regions, the relative yield of late maturing cultivars declined with increased distance from the equator.
- In both the tropics and subtropics, days to flowering was delayed more in late maturing cultivars than in early maturing cultivars with increased altitude.
- In both the tropics and subtropics, days to flowering was delayed more in late maturing cultivars than in early maturing cultivars with increased distance from the equator.
- In the tropics, in favorable environments (as measured by the average yield level), all cultivars flowered later but the effect was greatest on the late maturing cultivars.
- In the tropics, days to maturity was delayed with increased altitude, and the late maturing cultivars were delayed more than the early maturing cultivars.

SUMMARY

Fifty-one soybean cultivars were tested in the 1980 and 1981 International Soybean Variety Evaluation Experiments (ISVEX). The experiment sites were divided into 13 environmental zones which were defined by latitude and altitude. Three sets of cultivars were sent out: Group A to the tropics; Group B, subtropics; and Group C, temperate regions. The performance characteristics: yield, days to flowering, days to maturity, plant height, height to the first pod, seed size, protein content, oil content and several other characteristics are presented for all locations and summarized over all the locations where a given cultivar was grown.

The relative stability of the performance of a cultivar over a wide range of environments was determined. It was found that the relative performance estimates for cultivars were quite consistent in different groups and years.

The association of the various characteristics was studied by calculating the correlation coefficients among the characters measured at each location. Yield was positively correlated with number of plants harvested and seed weight and negatively associated with seed quality. These and other relationships can help plant breeders determine if it may be difficult to get the combination of characters desired in new cultivars.

Days to maturity is one of the most important characteristics in determining whether a cultivar is well adapted at a given location. The association of this characteristic with the response of cultivars to latitude, altitude and environment (as measured by general yield level) was studied by calculating the correlation coefficients between days to maturity and the partial regressions of each cultivar for yield, days to flower and days to maturity on altitude, latitude and the environment. In the tropics, the relative yield of the late maturing cultivars was less with increases in altitude. Similar relationships were studied for the effect of altitude, latitude and environment on the response of late maturing cultivars in terms of days to flower and days to maturity.

Table 9 lists the cooperators participating in the Eighth ISVEX. A list of abbreviations and acronyms used in this report is given in Table 10.

At the end of this report are six tables of results from 1979. These were not received in time for inclusion in the International Soybean Variety Experiment, Seventh Report of Results, 1979 (INTSOY Series number 24) but are included here to complete the report of 1979 results.

Table 8. Multiple regression coefficients indicating the influence of latitude, altitude, and average observed yield at a location on adjusted yield, days to flowering, and days to maturity. Adjusted days to maturity for each cultivar is given. The correlation coefficient (*r*) between days to maturity and the coefficients of each column is given in the bottom line

	Adjusted Yield (kg/ha)			Adjusted Days to Flowering			Adjusted Days to Maturity			
Cultivar	Altitude (meters)	Latitude (degrees)	Observed Mean Yield (kg/ha)	Altitude (meters)	Latitude (degrees)	Observed Mean Yield (kg/ha)	Altitude (meters)	Latitude (degrees)	Observed Mean Yield (kg/ha)	Adjusted Days to Maturity
					GROUP A 1980					
	$\times 10^{-1}$	$\times 10^{0}$	$\times 10^{-2}$	$\times 10^{-3}$	$\times 10^{-1}$	$\times 10^{-4}$	$\times 10^{-3}$	$\times 10^{-1}$	$\times 10^{-3}$	
L-125	−5.27**	−8.28	27.38**	−1.62	3.82**	6.78	−8.09*	4.27	−2.62	118
Caribe	−1.28	5.23	−2.63	−5.11**	3.62**	10.18	−11.36**	−1.29	0.44	114
L-109	−1.87	−0.34	−4.79	7.34**	−0.46	−1.30	9.19**	3.15*	0.64	113
IGH 24	−7.22**	0.41	−4.79	2.39	−1.13	16.24*	6.56**	1.00	−0.90	113
Jupiter	−1.70	4.27	−4.02	3.30**	1.02*	5.24	5.39**	0.21	−0.77	105
IGH 23	−5.50**	−6.90	−25.64**	2.27*	0.01	9.41	5.91**	−0.42	−0.35	105
Alamo	−1.87	11.22	0.93	0.07	−0.10	1.59	0.59	−0.39	−2.20**	102
G 2120	−3.27**	9.20	−30.64**	−4.12**	−0.96	12.23	9.45**	−2.76**	−2.70	102
UFV-1	−0.88	−20.61*	−4.09	−0.59	−0.11	8.59**	−0.57	−2.38**	1.48*	101
UFV-1(BP-2)	4.90	5.28	−9.12	−0.86	0.15	−3.74	1.52	4.12	0.85	101
Tunia	0.86	−0.88	1.64	−0.93*	0.43	−2.71	−1.41	−1.08	−0.98	100
Cobb	−0.96	6.97	−8.27	−1.71	−2.06**	−7.81	0.94	3.70	2.73	99
SJ-2	0.81	−4.80	−9.26	2.76**	−1.02	5.21	4.06**	1.74*	−1.67*	98
Improved Pelican	−1.68	18.61	−3.99	−2.06*	0.18	0.22	3.89*	0.11	1.19	97
Ecuador 1	−0.76	−42.36	34.54	−0.34	−0.43	−11.58	−4.15**	−0.64	−3.91**	95
Hutton	0.70	0.85	−10.89	−2.32**	−0.37	3.95	−5.78*	0.91	0.42	94
Davis	1.98	0.35	4.47	0.44	0.14	−1.72	−2.43*	−0.79	1.90**	94
Ransom	1.89	−7.47	−22.68	−2.69**	−0.19	0.89	−7.04**	2.43*	3.08**	92
Bossier	0.08	3.78	−11.11	−2.01*	−0.94	−13.33*	−2.78	2.87	1.82	91
Foster	0.05	−0.81	−6.44	−1.61**	−0.29	−12.19**	−3.48**	1.67*	−0.40	90
Williams	0.61	9.70	2.96	−3.18**	−0.95*	−8.90*	−2.92**	−1.72*	−2.45**	88
r	−0.628**	0.015	0.514*	0.337	0.563*	0.667**	0.871**	0.269	−0.177	
					GROUP B 1980					
	$\times 10^{-1}$	$\times 10^{0}$	$\times 10^{-2}$	$\times 10^{-3}$	$\times 10^{-1}$	$\times 10^{-4}$	$\times 10^{-3}$	$\times 10^{-1}$	$\times 10^{-3}$	
UFV-1	−4.16	24.69	−116.38	−1.35	1.28	59.37**	3.43	5.30	−0.35	134
G 2120	−3.82	0.11	−12.49	−12.49**	−0.76	102.46**	3.67	1.43	5.00	129
Alamo	−7.36	−2.92	−39.28	3.71	0.57	74.67**	0.16	0.13	5.34	129
Improved Pelican	−1.70	23.79	15.62	−10.79**	1.40	135.12**	2.93	−0.87	17.01**	126
PK-73-94	2.74	5.51	−71.20	−8.89*	0.22	47.88**	17.41**	1.22	5.89	123
Bossier	−1.38	6.22	− 6.88	0.22	2.44	− 8.35	−1.89	3.51**	−1.04	120
Davis	0.20	−4.98	− 9.26	−1.16	1.23	32.71	1.30	0.07	1.98	117
Foster	1.77	−11.50	− 8.28	0.23	1.64*	− 1.46	0.79	5.73**	0.19	116
Centennial	−0.50	3.64	−19.00	0.73	1.24	10.34	−2.32	2.24*	−3.18	112
Celest	0.99	4.17	12.46	−0.06	0.15	− 9.49	−1.81	−0.29	1.15	111
Forrest	−1.72	9.31	−13.90	−0.08	0.20	−24.19**	−1.70	−0.15	−3.09	110
Bay	0.99	3.27	10.42**	2.05**	0.88*	14.21**	−3.67*	−0.35	0.42	110
Gail	1.92	10.51	9.10	2.59**	0.88*	5.26	4.55**	0.41	−0.73	108
Ware	1.32	1.65	11.90	−1.55*	1.83**	− 7.35	2.53	1.00	−1.88	105
DeSoto	1.82	3.20	18.09	−0.94	1.98**	−30.89*	1.41	−3.46**	−1.76	101
Williams	0.24	6.70	3.06	−1.42	−3.45**	−13.29	−2.07	3.00**	−1.73	100
r	−0.681**	0.231	− 0.662	0.124	0.058	0.804**	−0.118	0.545*	−0.569*	

Continued

Table 8. Multiple regression coefficients indicating the influence of latitude, altitude, and average observed yield at a location on adjusted yield, days to flowering, and days to maturity. Adjusted days to maturity for each cultivar is given. The correlation coefficient (*r*) between days to maturity and the coefficients of each column is given in the bottom line, continued

Cultivar	Adjusted Yield (kg/ha)			Adjusted Days to Flowering			Adjusted Days to Maturity			Adjusted Days to Maturity
	Altitude (meters)	Latitude (degrees)	Observed Mean Yield (kg/ha)	Altitude (meters)	Latitude (degrees)	Observed Mean Yield (kg/ha)	Altitude (meters)	Latitude (degrees)	Observed Mean Yield (kg/ha)	
					GROUP C 1980					
	$\times 10^{-1}$	$\times 10^{0}$	$\times 10^{-2}$	$\times 10^{-3}$	$\times 10^{-1}$	$\times 10^{-4}$	$\times 10^{-3}$	$\times 10^{-1}$	$\times 10^{-3}$	
York	−7.32**	5.50	−54.46*	−19.25**	−16.70**	−34.33	−17.23**	−25.04**	−5.91	141
Celest	−3.05	−92.11*	−62.06**	−23.25**	−26.63**	42.50*	−24.31**	−41.05**	−2.20	138
Columbus	−3.21	−83.54*	−39.01*	−6.79**	−5.86	−19.88	−10.03**	−0.65	4.09	131
Kent	−2.94	−43.06*	−51.23**	−3.41	−4.07	2.51	−9.62**	−8.68	−13.88	129
Calland	−0.38	−6.64	−18.14	−0.25	1.19	−15.38	−6.62*	−9.39	6.67	121
DeSoto	3.79	−61.82	−12.66	−4.14*	−1.71	−1.35	−0.63	12.25*	2.39	120
Cumberland	−0.23	10.41	0.37	−1.28	−0.83	−3.91	0.45	8.04	0.14	116
Williams	0.96	−58.41*	−2.78	−0.87	0.36	−10.20	−3.63	10.36**	2.71	116
Williams 79	4.73**	−35.54	−0.73	−1.89	−1.61	−6.31	−4.27**	3.53	2.00	116
Will	3.55**	−38.54	11.65	−2.17	−3.18	4.94	−0.38	8.51*	2.97	113
Corsoy	3.61	29.58	4.35	−1.21	1.05	−6.35	5.32**	−7.66*	0.90	108
Coles	4.80	−23.80	−13.20	−1.18	−4.89	0.10	−1.26	3.09	−0.50	106
Chippewa	−2.25*	9.51	12.65	−0.01	−0.81	1.98	0.40	2.37	−0.74	104
Harlon	3.02*	31.64	12.94	0.64	−0.35	−5.59	−3.67**	−8.37**	−1.73	101
Evans	1.79	2.39	15.45	1.81	1.45	8.19	−1.23	−9.65	−1.79	99
McCall	4.95	27.72	−16.84	0.25	−2.88	8.46	−0.46	−8.44**	−1.80	96
r	0.547*	−0.621**	−0.834**	−0.824**	−0.703**	−0.140	−0.812**	−0.466	−0.040	
					GROUP A 1981					
	$\times 10^{-1}$	$\times 10^{0}$	$\times 10^{-2}$	$\times 10^{-3}$	$\times 10^{-1}$	$\times 10^{-4}$	$\times 10^{-3}$	$\times 10^{-1}$	$\times 10^{-3}$	
ICA Caribe	2.69	−4.39**	−10.92**	−2.65	4.24	25.86	−8.50**	0.76	2.32	119
IGH 24	−4.77**	5.82	−6.90	7.08**	2.11**	18.10**	8.55**	0.27	0.04	119
Jupiter	−3.54**	−6.55	−5.65	2.37	0.20	13.34	10.20**	1.64	−0.37	112
IGH 23	2.03	14.12	−19.80	5.79**	−0.51	3.98	5.91**	−2.49**	−1.79**	112
Ecuador 2	−0.71	−16.13*	0.51	0.98	1.64**	6.17	−0.91	1.57	1.80**	107
UFV-1	4.05**	−14.01	−1.76	1.01*	1.27**	3.58*	−3.43**	3.34**	1.44**	106
Alamo	−1.46	22.32	−11.94*	2.50**	1.11*	5.56	1.33	1.79*	−0.82	105
G 2120	−2.30*	0.71	−25.50**	3.20**	−1.84**	5.50	9.31**	−0.67	−2.50**	105
UFV-1 (BP-2)	3.92**	10.04	8.14	−1.33**	0.53	6.96*	1.52	1.14	2.22**	105
ICA Tunia	2.40	10.09	−2.35**	0.10	1.84*	1.05	−0.96	−3.41**	−1.64**	104
SJ-2	3.97*	−15.56	−2.69**	4.09**	0.03	−11.28*	2.77	1.30	−1.01	102
Improved Pelican	3.42*	−8.02	−12.95*	3.70**	0.20	−2.00	−5.23*	2.24*	0.24	99
Davis	1.81*	23.14**	16.27**	0.70	−0.01	2.89	−0.37	−1.67	0.69	98
Bossier	8.93	6.68	4.13	−1.27	−0.89	4.66	−6.56*	0.52	1.98*	94
Foster	1.91*	16.62**	3.79	−2.63**	−1.57*	6.76	−5.31**	1.16	0.56	93
Williams 79	−2.44**	−2.59	−9.80	−4.62**	1.09**	−13.10**	−6.82**	−2.42**	2.03**	88
r	−0.328	−0.135	−0.331	0.528*	0.691**	0.751**	0.497*	0.183	−0.195	

Continued

Table 8. Multiple regression coefficients indicating the influence of latitude, altitude, and average observed yield at a location on adjusted yield, days to flowering, and days to maturity. Adjusted days to maturity for each cultivar is given. The correlation coefficient (*r*) between days to maturity and the coefficients of each column is given in the bottom line, continued

Cultivar	Adjusted Yield (kg/ha)			Adjusted Days to Flowering			Adjusted Days to Maturity			Adjusted Days to Maturity
	Altitude (meters)	Latitude (degrees)	Observed Mean Yield (kg/ha)	Altitude (meters)	Latitude (degrees)	Observed Mean Yield (kg/ha)	Altitude (meters)	Latitude (degrees)	Observed Mean Yield (kg/ha)	
					GROUP B 1981					
	$\times 10^{-1}$	$\times 10^{0}$	$\times 10^{-2}$	$\times 10^{-3}$	$\times 10^{-1}$	$\times 10^{-4}$	$\times 10^{-3}$	$\times 10^{-1}$	$\times 10^{-3}$	
UFV-1	−1.51	−9.90	−4.95	2.81**	2.72	−1.20	−2.54	−3.47	3.37	125
Alamo	−7.80*	−50.60	−2.03	2.41**	1.67**	−0.48	1.31	1.05	−0.01	121
Improved Pelican	−7.29	−62.79	2.74	2.38**	1.45**	0.70**	4.12**	3.96**	−2.90**	118
Davis	3.14	7.62	−0.34	1.00**	0.50*	−0.01	−0.03	0.04	−0.21	116
Bay	4.56	32.02	3.39*	0.01	−0.10	0.16	0.38	0.41	0.93**	113
Essex	6.31*	61.94**	−2.85	−0.19	−0.19	0.23*	1.77**	1.31**	−1.42**	113
Celest	−5.58*	−28.50	−3.84*	1.22**	0.51*	0.43**	0.65	1.13	−0.72	111
PK-73-94	−4.79	−44.53	2.59	1.91**	1.65**	−0.67**	−0.56	0.21	−0.01	111
Foster	−1.34	13.20	4.03**	0.98**	1.10**	−0.35	1.59**	2.04**	−1.25**	110
Braxton	−1.99	20.34	2.01	1.10**	0.97**	−0.50**	1.99**	1.83**	−1.72**	110
DeSoto	2.49	34.13	−0.96	−0.58	−0.47	0.08	0.26	−0.46	−0.29	108
Gail	5.29	50.63*	−9.06**	0.01	−0.30	0.31**	0.16	0.59	0.00	108
Williams 79	−2.60	−26.26	1.78	−1.14**	−0.79**	0.39*	0.08	−0.34	−0.06	105
Centennial	2.80	34.76*	−4.34**	0.56	0.71**	0.34*	0.98	1.38**	−0.41	105
Crawford		−14.74	−1.42	−0.81**	−0.67**	0.04	−0.33	−0.65*	0.79**	105
Ware	−2.69	17.15	−3.25*	−0.49	−0.29	0.45*	−0.09	−0.14	−0.18	103
r	−0.225	0.354	0.029	0.806**	0.759**	−0.733**	−0.034	−0.144	0.231	
					GROUP C 1981					
	$\times 10^{-1}$	$\times 10^{0}$	$\times 10^{-2}$	$\times 10^{-3}$	$\times 10^{-1}$	$\times 10^{-4}$	$\times 10^{-3}$	$\times 10^{-1}$	$\times 10^{-3}$	
Celest	9.32*	−33.19	−52.79**	5.76	1.19	4.95**	3.48	5.01	2.76	151
Essex	1.92	−59.09	−11.44	14.74*	0.98	4.05*	11.42	−4.70	7.54**	149
Crawford	−2.03	−71.80**	3.50	6.81**	0.81	1.01	0.03	1.27	2.22*	136
Kent	2.22	−59.85**	−13.36	−1.49	1.24	−0.29	−0.02	−0.01	−0.23	136
DeSoto	0.35	−49.33**	−19.34*	2.03	−2.42*	−2.20**	−0.08	2.31	−1.19	131
Cumberland	−3.36	1.82	−7.79	7.68*	1.51	1.78	1.63**	−1.81	0.88	126
Williams 79	−1.81	−22.50	−8.89	−4.47*	1.50	0.40	1.51	0.74	−0.59	126
Pella	−2.38	−18.79	3.18	−2.32	−3.59**	−1.63**	−4.25	−2.75	−1.23	124
Century	0.53	27.16*	−10.95	1.88	−3.34**	−2.21**	−2.53	−1.83	−0.49	115
Amcor	4.06	18.83	4.66	3.36**	−3.48**	−1.16**	−0.89	−0.94	−0.19	119
Will	−2.86	22.03	−23.14**	1.82	−3.70**	−1.51**	−0.10	−1.18	−0.70	118
Hardin	1.15	43.50	10.16	11.10	−5.80	−2.53	3.38	−4.61	1.55	113
Corsoy 79	2.78	45.67**	23.80**	−1.43	−1.20	−1.60**	−0.99	1.07	−1.49	112
Hodgson 78	3.25	71.53**	−3.01	−1.83	2.58*	−0.15	−0.83	4.03	−0.46	109
Evans	2.46	46.26**	5.98	−3.21**	−4.40**	− 1.54**	5.06*	−1.99	−1.81*	104
McCall	4.33*	42.84**	5.87	−1.22	−4.26**	−0.55	9.91**	−3.71	0.02	101
r	0.077	−0.873**	−0.659**	0.511*	0.567*	0.7299**	0.089	−0.262	0.664**	

*p ≤ .05
**p ≤ .01

Table 9. List of cooperators participating in the Eighth International Soybean Variety Evaluation Experiment

Country	Year	Trial Number(s)	Name(s)	Mailing Address
Algeria	1980 1981	900* 307*, 308	Director	IDCI Station Regionale Khemis-Miliana Algeria
Argentina	1980 1981	928, 929 354, 355	Inga. Nora Mancuso	INTA Rivadavia 1439 Codigo 1033 Buenos Aires Argentina
	1980	833	Ing. Juan Carlos Suarez	INTA-Est. Exp. Reg. Agr. Marcos Juarez C.C. 21 2580 Marcos Juarez Peia de Cordoba Argentina
	1980 1981	923* 353	Ing. Agr. Carlos Remussi	Catedra de Cultivos Industriales Avda. San Martin 4453 Codigo 1417 Buenos Aires Argentina
	1980 1981	827, 828, 829, 830 188, 189	Ing. Agr. Ernesto Zelarayan	INTA C.C. 9 4000-San Miguel de Tucuman Argentina
Austria	1981	316	Dr. Ralph Gretzmacher	Universitat Fur Bodenkultur 33 Gregor Mendel St. A-1180 Vienna Austria
Azores	1980 1981	815 306*	Eng. Antonio da Fonseca Carvao and Eng. Luis Tadeau Duhe	Servicos Agricolas da Ilha Terceira Terceira Azores
	1980	812*	Eng. F. de Chaves M.	Servicos Agricolas da Santa Maria 9580 Vila do Porto Codex, Santa Maria Azores
Bangladesh	1981	214*	Dr. M. A. Khaleque, Ms. M. Khanum, and Mr. M.Obaidul Islam	BARI Joydebpur, Dacca Bangladesh
	1980 1981	724* 207	Dr. Ataur Rahman, Mr. A. J. Miah, and Mr. M. L. Das	Institute of Nuclear Agriculture P.O. Box 4 Mymensingh, Bangladesh
	1981	226**	Mr. Duane Auch	Mennonite Central Committee Box 785, 1/1 Block "A" Dacca 2, Bangladesh
	1981	235*	Dr. F. W. Sheppard, Jr. and Dr. Nizam U. Ahmed	IRRI and BRRI G.P.O. Box 911 Joydebpur,Dacca 2 Bangladesh
	1980	740, 831	Dr. Zahidul Hoque	BRRI G.P.O. Box 911 Joydebpur, Dacca, Bangladesh
Belize	1981	101	Dr. B. K. Rai	CARDI Min. of Agr. P.O. Box 2 Belmopan, Belize

Continued

Table 9. List of cooperators participating in the Eighth International Soybean Variety Evaluation Experiment, continued

Country	Year	Trial Number(s)	Name(s)	Mailing Address
	1980	570**, 732**	Dr. P. Collins	CARDI Central Farm Cayo District, Belize
Benin	1981	600, 601	Catholic Relief Services	B.P. 518 Cotonou, Benin
	1980	755	Mr. Alphonse Hounkpevi	SRECV de Niaouli B.P. 884 Cotonou, Benin
Bhutan	1980 1981	913* 204	Mr. Heinz Burgin	Rural Development Project Demonstration Farm Bumthang, Bhutan
Bolivia	1981	195, 121*	Ing. Herbert Zurita O. and Ing. A. Tejerina	CIAT Seoane 141, Casilla 247 Santa Cruz de la Sierra Bolivia
	1981	181	Ing. J. Bellott Eduardo Molina	CORGEPAI Casilla No. 1281 Santa Cruz de la Sierra Bolivia
	1981	116*, 117, 118	Ing. Jorge Aldunate and Ing. R. Delgadillo V.	IBTA Avda. Camacho 1471 5 Piso C.P. 5785 La Paz, Bolivia
	1981	179	Ing. Raul Zegarra U.	ANAPO Calle Bolivar 546 Casilla 2305 Santa Cruz, Bolivia
Brazil	1981	351	Dr. Jose Antonio Costa	Univ. Fed. Rio Grande do Sol B. Goncalves 7712 C.P. 776 90000 Porto Alegre, R.S. Brazil
	1981	132*	Dr. Kenneth G. Cassman	IRI C.P. 258 Rua Gaspar Viana 223 66000 Belem, Para Brazil
	1980	768	Dr. Luis Pedro Bonetti	FECOTRIGO Km. 7, Rodovia-Rs 10 C.P. 10 98.100 Cruz Alta, R.S. Brazil
	1980	744	Dr. M. Olson and Dr. E. Z. Antunes	UPR/EPAMIG Av. Amazones 115-6 Andar C.P. 515 30000 Bello Horizonte Brazil
Brunei	1981	127*	Dr. W. T. H. Peregrine	Dept. of Agriculture Brunei
Burma	1980	716*	Dr. M. Thein, Mr. U. Kyaw, Mr. H. Shwe, and Mr. M. Kgan	Applied Res. Division Gyogon, Insein P.O. Rangoon, Burma
Burundi	1981	218*	Dr. P. Devos and Mr. K. Kabengele	ISABU B.P. 136 Bujumbura, Burundi

Continued

Table 9. List of cooperators participating in the Eighth International Soybean Variety Evaluation Experiment, continued

Country	Year	Trial Number(s)	Name(s)	Mailing Address
Cameroon	1981	109*	Dr. Patrick Salez	IRA Dschang Station B.P. 44 Dschang, Cameroon
	1980	704*	Dr. J. Praquin	IRA B.P. 44 Dschang, Cameroon
	1981	103	Dr. M. A. de la Jourlais	SODEBLE B.P. 41 Ngaoundere, Cameroon
Chile	1980 1981	975 346*	Dr. Patricio C. Parodi and Ms. I. M. Nebreda	Univ. Catolico de Chile School of Agriculture Casilla 114-D Santiago, Chile
	1980	927*	Dr. Waldo Cerun Diaz	Univ. Catolico de Chile Dept. of Plant Science Casilla 114-D Santiago, Chile
	1980	924*	Ing. Vital A. Valdivia	Est. Exp. La Platina Casilla 5427 Santiago, Chile
China (Taiwan)	1980 1981	739* 221*	Dr. S. Shanmugasundaram	AVRDC P.O. Box 42 Shanhua, Tainan 741 Taiwan, China
Colombia	1980	733, 734, 735*, 737, 832*	Ing. Gilberto Bastidas Ramos, Ing. Orlando Agudelo, and Ing. C. A. V. Rodriguez	ICA A.A. 233 Palmira, Valle Colombia
	1980	736*, 783*	Ing. Miguel A. Munoz P., Ing. Luis A. Rojas M., and Gilberto Bastidas Ramos	ICA Centro Exp. Palmira A.A. 233 Palmira, Valle Colombia
Costa Rica	1980 1981	752 173*	Ing. Rodrigo Alfaro M. and Ing. Adrian Morales G.	Min. de Agr. y Ganaderia A.P. 10094 San Jose, Costa Rica
	1980 1981	749*, 750*, 751 174*	Ing. Francis Hsu, Mr. Justin Jackson, and Mr. Hector Madrigal	CARE Apartado 3571 San Jose, Costa Rica
Cyprus	1981	326	Dr. A. Hadjichristodoulou	Agr. Research Institute Min. Agr. Natur. Res. Nicosia, Cyprus
Czechoslovakia	1981	310*	Ing. Teodor Sinsky and Ing. Lubomir Pastucha	Vyzskumne Ustavy Rostlinne Vyroby, Ustav Genetiky Slecht. 161 06 Praha 6 Ruzyne 507 Czechoslovakia
Ecuador	1980 1981	728*, 729*, 730, 731 148*, 149	Ing. Eduardo Maldonado A. and Ing. Eduardo Calero	INIAP A.P. 7069 Guayaquil, Ecuador
	1981	193*	Mr. Yigal Natav and Ing. Edgar Bracho	Agrolandia Agricola Ind., S. A. Km. 51, Via Quevedo Santo Domingo, Ecuador

Continued

Table 9. List of cooperators participating in the Eighth International Soybean Variety Evaluation Experiment, continued

Country	Year	Trial Number(s)	Name(s)	Mailing Address
	1980	759*	Ing. R. Sagi and Ing. Edgar Bracho	Agrolandia Agricola Ind., S. A. Paez 738 y Ramirez Dazalos, Quito, Ecuador
Egypt	1981	311*, 361	Dr. E. K. Allam, Dr. S. A. Zaky, and Dr. Olfat El-Bagoury	Faculty of Agriculture University of Ain Shams Cairo, Egypt
	1981	203	Dr. M. N. Shatla	Associate Dean Menoufeia University Shebin El-Kom, Egypt
	1980 1981	805*, 806*, 910*, 911* 201*, 202, 301*, 302*	Dr. Ali Abdel-Aziz Ibrahim and Dr. Abdullah M. Nassib	Field Crops Res. Inst. Agr. Research Center Giza, Cairo, Egypt
	1981	315	Dr. A. M. Osman	Suez Canal University Ismailia, Egypt
	1980	807	Dr. M. M. Monir	Desert Research Inst. Mataria, Cairo, Egypt
Equatorial Guinea	1981	225, 231	Mr. Wilhelm Reupke	GTZ Malabo, Equatorial Guinea
Ethiopia	1980 1981	814*, 816* 142	Dr. Abdurahman Ali, Mr. Gasahun Woldie, and Mr. Girma G. Medhine	Inst. of Agr. Research P.O. Box 2003 Addis Ababa, Ethiopia
	1981	212*	Mr. Gebremariam Shekour and Mr. Tesfa Bogale	Jimma Agr. Res. Station P.O. Box 192 Jimma, Ethiopia
Fiji	1980 1981	719, 720, 721, 781 110*, 111* 112*	Dr. Richard Viner and Mr. Hemant K. Prasad	Legalega Res. Station P.O. Box 9086 Nadi Airport, Fiji
France	1981	314	Dr. M. Arnoux	INRA Station D'Amelioration Plantes, Ecole Nat. Superieure Agronomique 34060 Montpellier Cedex France
French Guiana	1980	711*	Mr. M. R. Vanbercie and Mr. P. Godon	IRAT B.P. 60, Cayenne 97301 Cayenne Cedex French Guiana
Gabon	1981	172*	Dr. V. Dupont, Dr. R.Ravoavy, and Mr. McIntyre	Proj. Dev. Agropastoral Lebamba UNDP/GAB/80/001 B.P. 2183 Libreville, Gabon
	1980 1981	706* 102*	Mr. J. Van Amerongen and Mr. G. Van De Plas	UNDP/FAO/GAB/75.003 CIAM B.P. 2183 Libreville, Gabon
	1980	769*	Mr. Yves Arcelin	Project GAB/71/518 B.P. 469 Oyem, Gabon
Ghana	1981	126*	Mr. Elmo Schmidt	Agro-Industries, Ltd. P.O. Box 1950 Kumasi, Ashanti, Ghana
	1980 1981	701* 150*	Dr. John K. Peprah	Crops Research Institute P.O. Box 3785 Kumasi, Ghana

Continued

Table 9. List of cooperators participating in the Eighth International Soybean Variety Evaluation Experiment, continued

Country	Year	Trial Number(s)	Name(s)	Mailing Address
	1980 1981	709* 128	Dr. John K. Peprah, Mr. Yaw Baafi Nimoh, and Dr. P. C. Addae	Grains Devel. Board P.O. Box 4000 Kumasi, Ghana
	1981	175	Mr. Edmund Darkwa	Agr. Research Stn. P.O. Box 9 Kpong, Ghana
Guatemala	1981	152, 153	Ing. Amadeo Del Valle Montufar	Agr. Research Stn. 3 Calle 10-40 Zona 11 Guatemala City Guatemala
	1980	723*, 811, 813, 816	Mr. C. Bialick, Mr. A. Praskin, Mr. D. Talbot, and Mr. F. C. Falla	PLENTY Agr. Project Embajada de Canada Zona 8 Guatemala City Guatemala
Guinea	1980	702, 771	Dr. Becaye Camara	INRAF B.P. 36 Kindia, Guinea
	1980	785, 786	Mr. Robert W. Temple	Western Engineering Co. 7700 San Felipe Suite 210 Houston, TX 77063 U.S.A.
Guinea Bissau	1980	184*, 134	Mr. Louis F. Macary	Centro Nac. Exp. Dept. of State Washington, D. C. 20521 U.S.A.
	1981	129*	Dr. Mike Maxey	c/o Ms. Judy Kuhn 243 Catalina Crick Jackson, MS 39204 U.S.A.
Guyana	1981	106, 190	Dr. Julius A. Ross	Central Agr. Station Mon Repos, E. C. D., Guyana
Haiti	1981	191, 193	Mr. Gilbert Bigic	ACIERIED P.O. Box 2493 Port au Prince, Haiti
	1981	177	Dr. Robert Cheaney	P.O. Box 1634 Port au Prince, Haiti
Honduras	1981	135	Ing. Pablo E. Paz	Escuela Agricola Panamericano P.O. Box 93 Tegucigalpa, Honduras
	1980	780	Ing. Juan Jose Osorto	Direccion Regional Recursos Naturales San Pedro Sula, Honduras
	1980	776	Dr. Julio Romero	SIATSA Division of Tropical Research La Lima, Honduras
India	1981	220	Dr. P. S. Bhatnagar	AICSRP G. B. Pant University of Agr. and Tech. Pantnagar, 263145, India
	1981	219	Dr. S. R. Viswanatha	Univ. of Agr. Sciences Bangalore 560024, India

Continued

Table 9. List of cooperators participating in the Eighth International Soybean Variety Evaluation Experiment, continued

Country	Year	Trial Number(s)	Name(s)	Mailing Address
	1980 1981	836 209, 210	Dr. M. D. Tedia	M. P. Oilseed Fed. Ltd., First Floor 38, Gadbhada Road T. T. Nagar Bhopal, M. P., India
	1981	206*	Dr. B. D. Chaudhary	A. E. B. Dept. of Plant Breeding Haryana Agr. Univ. Hissar 125004, India
Indonesia	1980	139, 140	Dr. Soenjoto Djojodirdjo and Ir. Baringin	Gadja Madha University Yogyakarta, Indonesia
	1980 1981	710* 125*	Ir. B. O. P. Tampubolon and Ir. Baringin	Fakultas Pertanin USU JL. Prof. Dr. A. Sofyan Medan, Indonesia
	1980	708*	Dr. Omar O. Hidayat and Mr. B. H. Siwi	Sukamandi Research Inst. for Food Crops Sukamandi, Sabang West Java, Indonesia
Iran	1980	656, 648	Mr. H. Pourdavai	Seed and Plant Improvement Institute Karaj, Iran
	1980	619	Dr. G. Noor-Mohammadi	Dept. of Agronomy College of Agriculture Jundi Shapur University Golestan, Ahvaz, Iran
	1980	107	Mr. M. C. Amirshahi	College of Agriculture Karaj, Iran
Iraq	1980 1981	909*, 926 205, 208, 312	Dr. S. S. Rajan	Resident Rep., UNDP IRQ/76/006 P.O. Box 2048 Alwiyah, Baghdad, Iraq
	1981	309, 313*	Dr. Suliaman Dawood and Dr. S. S. Rajan	Min. of Agriculture Mosul Exp. Station, Mosul, Iraq
	1980	801	Dr. Talib Ahmad Essa	Field Crop Dept. College of Agr. Abu-Ghraib, Iraq
Italy	1980 1981	915 343	Mr. Giovanni Porreca	Laboratorio Prod. Alimen. di Base C.S.N. Casaccia S. Maria di Galeria 0100 Rome, Italy
Ivory Coast	1981	101, 1001	M. le Correspondent	IRAT B.P. 635 Bouake, Ivory Coast
	1980	760	Mr. Levi	A.V.B. B.P. 1264 Bouake, Ivory Coast
Jordan	1980	904	Dr. Nasi Ibrahim Haddad	Faculty of Agriculture University of Jordan Amman, Jordan
	1980 1981	903 304	Dr. Nabil Katkhuda	Res. and Ext. Dept. P.O. Box 226 Amman, Jordan
Korea	1980 1981	917* 348*	Dr. Eun-hi Hong	Crop Exp. Station Suweon 170, Korea

Continued

Table 9. List of cooperators participating in the Eighth International Soybean Variety Evaluation Experiment, continued

Country	Year	Trial Number(s)	Name(s)	Mailing Address
Kuwait	1981	305	Dr. Omar Abu Elshawareb	Ministry of Public Works Agriculture Department Field Crops and Range Management, Division One, Kuwait
Lesotho	1980 1981	932* 362, 364	Dr. G. P. Tewari and Ms. Elizabeth Mofoka	Ministry of Public Works and Marketing P.O. Box 24, Maseru 100, Lesotho
	1981	360	Mr. Don Edkins	PLENTY P.O. Box 21 Mt. Moorosi Quthing, Lesotho
Liberia	1980 1981	718* 160*	Dr. Wilson K. Emaanzi	Central Agr. Res. Inst. Min. of Agriculture Monrovia, Liberia
Libya	1980	800*, 905*	Dr. John Ashley, Dr. K. Dahnous, and Dr. A. Maddur	UNDP P.O. Box 358 Tripoli, Libya
Madagascar	1981	166*, 167*, 227*, 228*	Dr. R. Randriamaholy	MAMISOA Siege: 10, Rue Rainizanabololona B.P. 1624 Antananarivo, Madagascar
	1980	765*	Dr. R. Ravoavy	CENRADERU Enterprise Socialiste MAMISOA B.P. 1444 Antananarivo, Madagascar
Malawi	1980 1981	777 196	Mr. A. Chiyembekeza and Mr. P. K. Sibale	Chitedze Agr. Res. Stn. P.O. Box 158 Lilongwe, Malawi
Malaysia	1980 1981	700 106	Mr. Macpherson Chia	Agr. Research Center Semongok P.O. Box 977, Kuching, Sarawak, Malaysia
	1980 1981	717* 131	Mr. Ng Kim Foh	Smallholders' Res. Div. R. R. I. Exp. Station Sungei Buloh, Selangor Malaysia
Mali	1981	157	Dr. Jerry A. Johnson	SAFGRAD/MALI/ACPO Ambassade Americaine B.P. 34 Bamako, Mali
	1980 1981	763* 138	Mr. Dielimoussa Soumano	S.R.C.V.O. Sotuba P.B. 438, Bamako, Mali
Mauritius	1980 1981	773* 211*	Dr. I. Rajkomar and Dr. V. Veerapa	Ministry of Agriculture, INRPE Reduit, Mauritius
Mexico	1980	756*,799*, 822	Dr. Jorge Nieto Hatem, Ing. M. C. Nicolas Maldonado M., and Ing. Reza Aleman Rafael	INIA, CIAGON A.P. C-1 Tampico, Tamps. Mexico
	1980	757*	Dr. Jorge Nieto Hatem and Ing. Mario Rivera de L.	CIAPY A.P. 341, Campeche, Camp. Mexico

Continued

Table 9. List of cooperators participating in the Eighth International Soybean Variety Evaluation Experiment, continued

Country	Year	Trial Number(s)	Name(s)	Mailing Address
Morocco	1980 1981	919, 921*, 922 328*, 329	Dr. M. A. Yacoubi and Mr. Ahmed Mabrouk	Inst. Agron. Vet. Hassan II (DSS) B.P. 704 Rabat-Agdal, Morocco
	1980	914, 916*	Dr. M. A. Yacoubi and Mr. Omer Roussel	ORMVAL Research Inst. B.P. 48, Ksar el Kebir, Morocco
	1980	906*	Mr. H. Mellass, Dr. M. A. Yacoubi, and Mr. Omer Roussel	Inst. Agron. Vet. Hassan II (DSS) B.P. 48 Rabat-Agdal, Morocco
Mozambique	1980 1981	898 142	Dr. W. Sichmann	FAO/UNDP/SOYA DEV/80/020/Moz Maputo, Mozambique
	1980	834*	Mr. J. C. Castiaux, Mr. G. Tomm, and Dr. Sichmann	UNDP Project Moz/75/009 C.P. 4595 Maputo, Mozambique
Nepal	1981	342*	Mr. Krishna P. Sharma	IAAS/MUCIA P.O. Box 984 Kathmandu, Nepal
	1980 1981	802*, 803, 804* 330*	Mr. M. P. Bharati, Mr. R. K. Neupane, and Mr. B. P. Shah	Dept. of Agriculture P.O. Box 1336 Hari Har Bhavan, Nepal
New Caledonia	1981	238*	Mr. F. Devinck	B.P. 37 Bourail, New Caledonia
Pakistan	1980 1981	809, 810* 213, 216, 255, 347, 352	Dr. A. Rahman Khan and Dr. Altaf Hussain Chaudhry	Pakistan Agriculture Research Council L-13, Al-Markaz, F-7/2 P.O. Box 1051 Islamabad, Pakistan
	1980	941*, 942, 943*, 625**	Mr. J. R. Lockman and Mr. G. J. Thompson	Technical Services Assoc. 23-2 Race Course Road Lahore 3, Pakistan,
	1980	808*	Dr. Altaf Hussain Chaudhry and Dr. A. Rahman Khan	Agricultural Research Institute Tandojam, Pakistan
	1980	833, 834	Dr. Akhtar Beg	Agricultural Research Council L-13, Almarkaz, F-7/2 Islamabad, Pakistan
	1981	324*	Dr. Sayed Badshah, Dr. Zar Quresh Khan, and Mr. Mohammad Rahim	North West Frontier Prov. Agr. Res. Inst. Tarnab, Peshawar Pakistan
	1980	912*	Dr. A. Rahman Khan, Dr. Zar Quresh Khan, and Mr. Mohammad Rahim	Agricultural Research Council L-13, Almarkaz, F-7/2 P.O. Box 1051 Islamabad, Pakistan
Panama	1980	762*	Dr. Gaspar Silvera	Inst. Invest. Agr. de Panama Apartado 6-4391 Estefata, El Dorado, Panama
Paraguay	1980 1981	825* 234*	Ing. R. Cassacio, Ing. J. Lopez, Ing. O. Aguilera, and Ing. E. Alvarez	USAID/Asuncion/B. Cooper Pte. Franco No. 472 Asuncion, Paraguay
	1981	176*, 199*	Mr. Lu Dee Wang	Mission Tecnical Agr. China Caacupe, Paraguay

Continued

Table 9. List of cooperators participating in the Eighth International Soybean Variety Evaluation Experiment, continued

Country	Year	Trial Number(s)	Name(s)	Mailing Address
	1981	186, 187	International Research Institute	1 Rockefeller Plaza Room 1401 New York, NY 10020 U.S.A.
	1980	821	Mr. Tom Cunilio	Soybean International Paraguay, S.R.L. Eificio Lider II, piso, No. 23 Juan O'Leary Esq. Gral. Diaz Asuncion, Paraguay
Peru	1980	741, 745, 748, 772,	Dr. Luis H. Camacho	INTSOY/Peru Dept. of State Washington, D. C. 20521 U.S.A.
	1980 1981	705*, 707*, 742* 161*, 163, 182*	Dr. Luis H. Camacho, Ing. Rufino Montalvo S., Ing. Carlos Loayza, Ing. Rodolfo Vargas S., Ing. C. A. Maeeda C., and Ing. J. I. M. Gonzales	INIPA Avenida Guzman Blanco 309 Lima, Peru
	1981	236	Dr. Hugo Soplin V.	Dept. de Fitotecnia Univ. Nacional Agraria La Molina, Lima, Peru
	1981	232	Ing. Cabanillas	Office of Food for the Hungry Pachamama 233 Zarate, Lima, Peru
	1981	137, 170	Dr. Hugo Villachica Leon	Director, Inst. Regional du Desarollo Univ. Nacional Agraria La Molina, Lima, Peru
Philippines	1981	107	Mr. Yigal Natav	Eisenberg and Co. 4 East 39th Street New York, NY 10016 U.S.A.
	1981	142	Dr. Roberto A. Grande	Twin Rivers Research Center P.O. Box 305 Davao City, Philippines
	1980	782*	Dr. Filemon T. Agbisit	Cagayan State Univ. Tuguegarao Cagayan, Philippines
	1980 1981	722* 143	Dr. Benjamin M. Legaspi	Economic Garden Bureau of Plant Industry Los Banos, Laguna, Philippines
	1980 1981	774* 114*, 168	Mr. R. E. Furoc, Mr. R. Morris, and Dr. Johnny Pendleton	IRRI Multiple Cropping Dept. Los Banos, Laguna, Philippines
	1981	113, 123*	Dr. Frederico D. Ballon	Botanique Philippines Suite 706 Midland Mansions 839 Pasay Road, Makati Metro Manila, Philippines
Poland	1980	800	Dr. Jerry Szyrmer	IHAR Radzikow, 05-870, Blonie K Warsaw, Poland
Portugal	1980 1981	902* 317*	Ing. Abilio Mendes Gaspar	Est. Agron. Nac., INIA Quinta do Marquis 2780 Oeiras, Portugal

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Table 9. List of cooperators participating in the Eighth International Soybean Variety Evaluation Experiment, continued

Country	Year	Trial Number(s)	Name(s)	Mailing Address
	1980 1981	918 318	Ing. Abilio Silva and Ing. Alves	INIA Gualtor 4700 Braga, Portugal
Puerto Rico	1980 1981	743*, 819* 158*, 223	Mr. Jose Bravo and Dr. Luis Camacho	INTSOY/Puerto Rico Isabela Agr. Res. Stn. P.O. Box 506 Isabela, P. R. 00662 U.S.A.
	1981	159	Dr. W. Chris Stearn, Dr. Luis H. Camacho and Mr. Jose Bravo	INTSOY/Univ. of Puerto Rico, Mayaguez, College Stn. Mayaguez, P. R. 00662 U.S.A.
Rwanda	1980 1981	703* 303	Dr. Pierre Nyabyenda	ISAR Station de Rubona B.P. 138 Butare, Rwanda
Saudi Arabia	1981	224*	Dr. Mohamed Zeini Jowana and Mr. Eddie Huang	Ministry of Agriculture and Water Riyadh, Saudi Arabia
Sierra Leone	1980 1981	758 171	Dr. R. A. Williams	Rice Research Station Rokupr, Sierra Leone
Somalia	1981	119, 120*	Dr. H. O. Mongi, and Dr. S. G. Ossoble	Mogadishu Som/72/014 UNDP P.O. Box 24 Mogadishu, Somalia
	1980	721	Dr. Salad G. Ossoble	Agr. Research Inst. Ministry of Agr. Mogadishu, Somalia
Sri Lanka	1980 1981	712*, 713, 714*, 715*, 997* 122*, 124*, 130*	Mr. Cecil D. Dharmasena, Mr. B. N. Emerson, Mr. B. M. Karunaratne, and Mr. M. E. R. Pinto	CARI Gannoruwa, Peradeniya Sri Lanka
Sudan	1980 1981	727*, 151*	Dr. Osman A. A. Ageeb	Agr. Research Corp. Gezira Res. Station P.O. Box 126 Wad Medani, Sudan
	1980 1981	726* 141	Dr. Fathi Mohamed Khalifa	Abu-Naama Research Stn. Abu-Naama, B.N.P. Khartoum, Sudan
	1980	784*, 835*	Dr. Mukhtar M. Kanani	Agr. Research Corp. Kudugli Research Center P.O. Box 5141 Khartoum South, Sudan
	1980 1981	747* 159	Dr. Alexis B. San Valentin	UNDP Soil and Crop Investigation Project P.O. Box 913 Khartoum, Sudan
	1981	133, 136	Dr. J. Cowburn	Western Savanna Devel. Corporation Hunting Tech. Serv. Ltd. P.O. Box 6172 Peoples Hall Post Office Khartoum, Sudan
	1981	299	Dr. Bernhard	Pilot Proj. Agr. Devel. Project Adm. Bureau P.O. Box 8192 Khartoum, Sudan

Continued

Table 9. List of cooperators participating in the Eighth International Soybean Variety Evaluation Experiment, continued

Country	Year	Trial Number(s)	Name(s)	Mailing Address
	1980 1981	725** 115	Mr. Stephen P. Jones	P.O. Box 119, Juba APO NY 09668 U.S.A.
	1980	753*	Dr. Omer E. Simsaa and Dr. Mukhtar Mekki Kanani	Kadugli Research Stn. Kadugli, Sudan
Surinam	1980	998*, 999*	Dr. J. F. Wienk	Centre for Agr. Research Leysweg, Dist. Surinam P.O. Box 1944 Paramaribo Zuid, Surinam
Syria	1980 1981	920 332	Dr. A. Halim Idris and Dr. A. I. Archid	Ministry of Agr. and Agrarian Reform Directorate Science and Agr. Research Damascus, Syria
Tanzania	1981	144*	Dr. A. J. Carpenter	Box 159 Zanzibar, Tanzania
	1980	818	Development Alternatives, Inc.	Arusha, Tanzania
	1980	754	Dr. B. B. Singh	IITA/USAID/TANZANIA Project Ilonga Project-Agr. Res. Private Bag Kilosa, Tanzania
Thailand	1981	165*	Mr. Amnuay Tongdee and Mr. K. Puangprakone	Tak-Fah Field Crops Research Center Tak-Fah Nakornsawan, Thailand
	1980 1981	763* 162*	Dr. P. Srinives, Mr. R. Kaveeta, Mr. D. Soumano, and Mr. K. Distabanjong	Kasetsart University Bangkhen, Bangkok 9 Thailand
	1980	720	Dr. Arwooth NaLampang	Oil Crops Research Dept. of Agriculture Bangkhen, Bangkok 9 Thailand
	1980	820	Dr. Dumrong Tiyawalee	Faculty of Agriculture Chiang Mai University Chiang Mai, Thailand
Togo	1981	1002	Chef de la Mission	IRAT/Togo B.P. 1163, Lome, Togo
Tonga	1980	820	Dr. Haniteli Ofa Faanunu	Ministry of Agr. P.O. Box 45 Neiafu Vavau, Tonga
Trinidad	1981	178	Director	Chaguaramas Agricultural Development Program Min. Agriculture, Lands and Fisheries St. Clair, Port of Spain Trinidad
Turkey	1981	327, 331 333, 340 341	Dr. Nadir Izgin	General Directorate of Agr. Research P.O. Box 226 Ankara, Turkey
	1980 1981	907* 319*, 320* 321*, 322*, 323, 342	Dr. Yasar Bilgin, Mr. Cevdet Nalci, and Mr. Talat Arkont	Seker Enstitusu Agronomi Sube Sefi Etimesgut-Ankara Turkey

Continued

Table 9. List of cooperators participating in the Eighth International Soybean Variety Evaluation Experiment, continued

Country	Year	Trial Number(s)	Name(s)	Mailing Address
	1980	650**, 651**	Dr. Y. Zia Kutlu and Mr. H. Suat Cinsoy	Regional Agricultural Research Institute P.O. Box 9 Menemen, Izmir Turkey
	1981	217*	Dr. I. Atakisi, Dr. Engin, and Dr. Haris Arioglu	G. U. Ziraat Fakultesi P.K. 444 Adana, Turkey
	1980 1981	908* 344	Dr. Necmi Akkoyunlu	Karadeniz Bolge Zirai Arastirm Enstitusu P.K. 39 Samsun, Turkey
United States of America	1980 1981	715, 719, 823*, 824* 230*	Dr. Richard Creelman	Texas Agricultural Experiment Station 2415 East Highway 83 Weslaco, TX 78596 U.S.A.
	1981	345*	INTSOY	Dept. of Agronomy 1102 South Goodwin Ave. Urbana, IL 61801 U.S.A.
Upper Volta	1981	155*	Dr. S. Asimi	IRHO/H.V. B.P. 1345 Ougadougou, Upper Volta
	1980 1981	719* 147*	Dr. Elias Vanounou and Mr. Michael Horn	CERCI B.P. 540 Bobo-Dioulasso, Upper Volta
Uruguay	1981	233*	Ing. N. Chebataroff and Ing. E. Deambrosi	Est. Exp. del Este A. Miranda y A. R. de Segarra, Treinta y Tres, Uruguay
	1981	237	Dr. Fernando Olmos	Agronomia Cerro Largo Ansina 716 Melo-Cello Largo, Uruguay
Venezuela	1980	734, 738	Dr. Raul Nino	Fundacion Servico para el Agricultor Apto. 162 Cauga, Edo. Aragua Venezuela
	1980	745, 746	Dr. Ricardo Contrenas	Estacion Experimental "El Guayabo" Apto. 1316 Maracaibo, Venezuela
Vietnam	1981	1*	Dr. Ngo Quang Thang	National Institute of of Agricultural Science Thanh Tri, Hanoi, Vietnam
	1981	240	Dr. A. H. Mansour	Project Coordinator VIE/76002 P.O. Box 20 New York, NY 10017 U.S.A.
	1980 1981	84** 198*, 239, 363	Dr. Tran Thuong Tuan, Dr. Vo-Tong Xuan, and Mr. Nguyen Kim	Soybean Research Center University of Cantho Cantho, Hau-giang Vietnam
West Indies	1981	145	Dr. Laxman Singh	CARDI Ministry of Agriculture P.O. Box 766 St. John's Antigua West Indies

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Table 9. List of cooperators participating in the Eighth International Soybean Variety Evaluation Experiment, continued

Country	Year	Trial Number(s)	Name(s)	Mailing Address
Yemen	1981	241	Mr. Jamal Fuad, Mr. J. A. Sailan, and Mr. B. Adhilcory	FAO Project Agr. Research Service P.O. Box 4788 Taiz, Yemen
	1981	229	Dr. A. I. Kheiralla	Tihama Devel. Authority P.O. Box 3792 Hodeidah, Yemen
Zaire	1980 1981	720, 1003*, 242*	Dr. Q. H. Nguyen, Ir. Bouwe, Ir. Elukesu, and Mr. Komba L.	MASI/INERA team and USAID/Kinshasa/ID Dept. of State Washington, D. C. 2052O U.S.A.
	1981	194	Mr. Ronald Monroe	Mission Methodiste B.P. 122 Kamina, Shaba, Zaire
	1980 1981	775* 108*	Dr. Bridgmon, Mr. Mbakayi, and Ir. Elukesu	MASI/INERA Bukavu Mulungu Research Station Zaire
	1981	199	Dr. Robert Patterson	Dept. of Crop Science P.O. Box 5155 Raleigh, NC 27650 U.S.A.
	1981	164, 181	Mr. J. Lewin	DAIPN B.P. 10598 Kinshasa 1, Zaire
	1980	767*, 768	Mr. Douglas Welch, Mr. T. R. Wayman, and Mr. William Anderson	Hopital Bibanga B.P. 174 Mbuji Mayi Kasai Oriental, Zaire
	1980	761	Mr. Jacques Brecx	Plantation de Kumu Plankumu B.P. 7049 Kinshasa 1, Zaire
Zambia	1980 1981	777*, 779* 177*, 183*, 185, 197*	Dr. F. Javaheri and Dr. R. N. Singh Dr. R. N. Singh	Dept. of Agriculture Mt. Makulu Research Stn. Private Bag 7 Chilanga, Zambia
	1981	192	Dr. A. T. H. Sergeant	Landell Mills 1 Chaholi Road P.O. Box 3000 Lusaka, Zambia
	1980	778*	Dr. C. Nissly and Dr. F. Javaheri	Dept. of Agriculture Mt. Makulu Research Stn. Private Bag 7 Chilanga, Zambia
Zimbabwe	1980 1981	826* 349*	Dr. J. R. Tattersfield and Mr. J. S. Tichagwa	Crop Breeding Institute Box 8100 Causeway, Harare, Zimbabwe

* Data returned and analyzed.
** Data returned but insufficient for analysis.

Table 10. Abbreviations and acronyms used in this report

Abbreviation or Acronym	Meaning
ACCFCBTSL	Agricultores Cooperativados e Congregados Pela Federacao das Cooperativas Brasileiras de Trigo e Soja Ltda
AES	Agriculture Experiment Station
AICRPS	All India Coordinated Research Project on Soybeans
ANAPO	Associacion Nacional de Produccion de Oleaginoso (Bolivia)
AVRDC	Asian Vegetable Research and Development Center
BARI	Bangladesh Agricultural Research Institute
BPI	Bureau of Plant Industry (Philippines)
BRRI	Bangladesh Rice Research Institute
CARDI	Caribbean Agricultural Research and Development Institute
CARI	Central Agricultural Research Institute (Sri Lanka)
CENRADERU	Centre National de Recherche Appliquee au Developpement Rural (Madagascar)
CERCI	Centre d'Experimentation du Riz et des Cultures Irriguees (Cameroon)
CIAGON	Centro de Investigaciones Agricolas del Golfo Norte (Mexico)
CIAT	Centro de Investigacion Agricola Tropical (Bolivia)
CORGEPAI	Corporacion Gestora del Proyecto Abapo-Izozog (Bolivia)
DAIPN	Domaine Agro-Industriel Presidentiel de la N'Lele (Zaire)
EPAMIG	Empresa de Pesquisa Agropecuaria de Minas Gerais (Brazil)
FAO	Food and Agriculture Organization
FECOTRICO	Federacao das Cooperativas Brasileiras de Trigo e Soya Ltda.
GTZ	Gesellschaft fUr Technische Zusammenarbeit
IAAS	Institute of Agriculture and Animal Science (Nepal)
IBTA	Instituto Boliviano de Tecnologia Agropecuaria
ICA	Instituto Colombiano Agropecuario
IDCI	Institut de Developpement des Cultures Industrielles (Algeria)
IHAR	Instytut Hodowli i Aklimatyzacj i Roslin (Poland)
IITA	International Institute of Tropical Agriculture
INERA	Institut National Pour L'Etude et la Researche Agronomiques (Zaire)
INIA, Mexico	Instituto Nacional de Investigaciones Agricolas (Mexico)
INIA, Portugal	Instituto Nacional de Investigacao Agraria (Portugal)
INIAP	Instituto Nacional de Investigaciones Apropecuarias (Ecuador)
INIPA	Instituto Nacional de Investigaciones Promocion Agropecuaria (Peru)
INRA	Institut National de la Recherche Agronomique (France)
INRAF	Institut Nacional de Recherche Agronomique de Foulaya (Guinea)
INTA	Instituto Nacional de Tecnologia Agropecuaria
INTSOY	International Soybean Program
IRA	Institut de la Recherche Agronomique
IRAT	Institut de Recherches Agronomiques Tropicales et des Cultures Vivrieres
IRHO	Institut de Recherches pour les Huiles et Oleagineux
IRRI	International Rice Research Institute
ISABU	Institut des Sciences Agronomiques du Burundi
ISAR	Institut des Sciences Agronomiques du Rwanda
ISVEX	International Soybean Variety Evaluation Experiment

Continued

Table 10. Abbreviations and acronyms used in this report, continued

Abbreviation or Acronym	Meaning
MAMISOA	Malagasy Mukarakara Soja Afovoany Andrefana
MASI	Multinational Agribusiness Systems Inc.
MCC	Mennonite Central Committee
MUCIA	Midwest Universities Consortium for International Activities, Inc.
NARC	National Agriculture Research Center (Pakistan)
ORMVAL	Office Regional de Mise en Valeur
SIATSA	Servicios para la Investigacion Agricola Tropical, S.A. (Honduras)
SRCVO	Section de Recherche sur les Cultures Vivrieres et Oleagineux (Mali)
SRECV	Station de Recherches et Experimentationes sur les Cultures Vivrieres (Benin)
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
USRSL	United States Regional Soybean Laboratory

Agronomic Characteristics for Individual Sites, 1980 and 1981

Table 11. Experiment 900, 1980

Country: ALGERIA
Region: AFRICA
Latitude: 36° 15′ N
Longitude: 2° 14′ E
Zone: 10
Elevation: 289 m

Site: AHMER-EL-AIN (BLIDA)
Cooperator(s): DIRECTOR

Date planted: May 25, 1980
Date harvested: September 1980
Soil type: sand 20 %, silt 75 %, clay 20 %, pH 7.8
Fertilizer used (kg/ha): N 30, P 60, K 60
Amount of moisture: 400 mm
Number of irrigations: 5 (300 mm)
Substitute cultivars: S 1474, Hei-Ho 3

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
57	Corsoy 79	1328.00		103.00	2.25	1.85	100.00	315.00	68.88	1.00
54	Chippewa 64	1193.12		96.00	2.90	3.15	100.00	100.00	63.43	1.00
36	Evans	1122.57		92.00	2.55	2.00	100.00	100.00	49.30	1.00
58	Williams 79	1099.75		108.00	2.85	2.00	100.00	100.00	72.72	1.00
56	Coles	1027.12		96.00	2.30	2.30	86.25	100.00	72.10	1.00
38	McCall	958.65		86.00	2.40	2.35	100.00	100.00	51.90	1.00
59	Will	931.67		99.00	2.80	2.70	100.00	86.25	60.20	1.00
9900	S 1474	771.90		86.00	2.80	2.25	97.50	100.00	62.63	1.00
61	Cumberland	734.55		108.00	1.80	2.10	100.00	92.50	66.53	1.00
55	Harlon	697.20		96.00	2.10	2.25	100.00	325.00	65.80	1.00
9901	Hei-Ho 3	676.45		86.00	3.05	3.50	86.25	95.00	47.33	1.00
14	Williams	670.22		108.00	2.45	2.35	100.00	100.00	67.85	1.00
50	DeSoto	603.82		108.00	2.75	2.00	100.00	320.00	63.40	1.00
	Grand mean	908.85		97.85	2.54	2.37	97.69	148.75	62.47	1.00
	Standard error of cultivar mean	139.34			.38	.39	4.39	107.94	2.38	
	Coefficient of variation (%)	30.66			30.00	32.81	8.99	145.13	7.62	
	5% LSD Cultivar means (*****=ns)	399.66			*****	*****	*****	*****	6.83	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
57	Corsoy 79	1.00	293.75	17.75	5.78	10.70	3.00	80.00	42.1	19.1
54	Chippewa 64	1.00	182.25	15.05	6.15	13.42	1.00	98.00	42.7	19.4
36	Evans	1.00	130.50	15.53	6.60	14.40	2.25	90.00	43.0	21.2
58	Williams 79	1.00	304.75	16.78	5.65	12.30	1.00	94.00	43.9	17.7
56	Coles	1.00	245.25	18.05	6.50	10.94	3.00	83.00	42.7	18.3
38	McCall	3.00	127.75	14.43	7.90	13.29	2.25	87.75	42.2	19.5
59	Will	1.00	277.25	16.50	5.33	10.28	1.00	86.00	44.4	18.2
9900	S 1474	1.00	212.75	20.70	5.00	11.80	2.75	87.00	43.7	18.0
61	Cumberland	1.00	226.50	14.38	4.93	11.68	1.00	92.00	44.2	18.8
55	Harlon	1.00	116.25	16.78	6.60	14.52	2.00	90.00	42.4	19.9
9901	Hei-Ho 3	3.00	78.75	12.83	6.48	20.74	2.25	95.00	43.8	17.8
14	Williams	1.00	210.75	12.43	5.40	11.72	1.00	96.00	44.2	19.3
50	DeSoto	1.00	257.75	12.88	4.93	13.75	2.00	77.00	42.0	19.9
	Grand mean	1.31	204.94	15.70	5.94	13.04	1.88	88.90		
	Standard error of cultivar mean		40.21	1.36	.55	.16	.13	.21		
	Coefficient of variation (%)		39.24	17.33	18.42	2.38	14.30	.47		
	5% LSD Cultivar means (*****=ns)		115.32	3.90	1.57	.45	.39	.60		

Table 12. Experiment 307, 1981

Country: ALGERIA
Region: AFRICA
Latitude: 36° 15′ N
Longitude: 2° 14′ E
Zone: 10
Elevation: 289 m

Site: KHEMIS MILIANA
Cooperator(s): DIRECTOR, I.D.C.I. STATION REGIONALE

Date planted: May 10, 1981
Date harvested: August 1981
Soil type: sand 45%, silt 20%, clay 35%, pH 8.2, argilo limoneux
Fertilizer used (kg/ha): N 30.0, P 80.0, K 100.0
Amount of moisture: 824 mm
Substitute cultivars: Weber and Maple Arrow

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
51	Celest				3.50		37.50			
50	DeSoto	1958.14			3.50		27.50		59.05	1.00
59	Will	1291.54			4.00		25.00		67.90	2.00
73	Century	1277.65			3.75		40.00		66.12	2.00
57	Corsoy 79	1222.10			3.25		41.25		65.55	1.00
58	Williams 79	1222.10			3.75		28.75		61.40	1.00
35	Crawford	1194.32			3.50		56.25		59.30	1.00
71	Hodgson 78	1166.55			3.75		26.25		65.45	1.00
107	Weber	1027.67			4.00		38.75		63.12	1.00
74	Pella	972.12			3.75		38.75		62.12	2.00
72	Amcor	958.24			3.75		51.25		56.90	1.00
60	Kent	902.69			3.75		37.50		51.40	1.00
70	Hardin	738.81			3.50		37.50		63.10	1.00
38	McCall	722.15			3.50		58.75		60.90	1.00
36	Evans	305.52			3.75		36.25		52.15	1.00
201	Maple Arrow	255.53			3.75		47.50		51.80	1.00
	Grand mean	1014.34			3.67		39.30		60.42	1.20
	Standard error of cultivar mean	130.30			.25		6.49		2.59	0.00
	Coefficient of variation (%)	25.69			13.59		33.04		8.58	0.00
	5% LSD Cultivar means (*****=ns)	371.90			*****		18.49		7.40	0.00

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
51	Celest									
50	DeSoto	1.00	429.75	12.12	5.17	13.10	3.00		41.7	19.0
59	Will	1.00	280.75	12.40	4.45	12.50	3.00		43.2	20.0
73	Century	2.00	344.25	12.52	4.57	12.00	3.00		43.6	19.1
57	Corsoy 79	3.00	341.75	12.45	4.27	12.50	4.00		43.0	20.1
58	Williams 79	1.00	222.75	12.25	4.87	10.50	2.00		43.9	18.2
35	Crawford	1.00	329.25	12.32	4.80	10.20	3.00		41.4	18.9
71	Hodgson 78	3.00	319.50	13.02	4.52	12.70	2.00		41.4	20.9
107	Weber	4.00	335.25	14.45	4.75	10.90	4.00		41.7	19.3
74	Pella	1.00	316.50	11.12	5.57	12.20	4.00		42.7	16.3
72	Amcor	2.00	320.00	12.40	3.60	10.40	4.00		42.2	19.5
60	Kent	1.00	378.50	10.90	4.82	10.10	4.00		44.0	18.7
70	Hardin	2.75	332.50	15.50	4.52	12.50	3.00		41.0	20.3
38	McCall	4.00	323.00	13.32	4.27	10.20	2.00		41.7	20.7
36	Evans	4.00	305.00	12.95	4.75	11.20	3.00		41.3	19.8
201	Maple Arrow	4.00	312.50	13.17	4.45	11.30	3.00			
	Grand mean	2.32	326.08	12.73	4.63	11.49	3.13			
	Standard error of cultivar mean	.06	21.21	.70	.21	0.00	0.00			
	Coefficient of variation (%)	5.57	13.01	10.98	9.04	0.00	0.00			
	5% LSD Cultivar means (*****=ns)	.18	60.55	1.99	.60	0.00	0.00			

Table 13. Experiment 923, 1980

Country: ARGENTINA
Region: SOUTH AMERICA
Latitude: 34° 35 MIN S
Longitude: 68° 29 MIN W
Zone: 10
Elevation: 25 m
Site: UNIVERSITY OF BUENOS AIRES
Cooperator(s): AGR. CARLOS REMUSSI
Date planted: December 2, 1980
Date harvested: June 1981
Amount of moisture: 660.2 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
62	York	1288.30	46.00						86.25	2.50
51	Celest	1213.53	45.00						156.75	2.50
32	Columbus	956.88	39.75						123.00	2.00
60	Kent	937.71	36.00						108.50	1.00
21	Calland	807.29	36.00						110.00	1.00
56	Coles	775.10	28.00						94.25	1.25
38	McCall	739.99	22.00						60.75	1.50
61	Cumberland	643.32	36.00						102.50	1.50
59	Will	624.81	36.00						95.00	1.00
14	Williams	612.38	36.00						104.25	1.00
50	DeSoto	608.00	34.00						127.00	1.00
57	Corsoy 79	558.52	32.00						90.00	1.75
58	Williams 79	483.51	36.00						105.00	1.00
36	Evans	446.56	28.00						73.50	1.00
55	Harlon	363.57	28.00						70.50	2.00
54	Chippewa 64	156.96	28.00						65.25	1.25
	Grand mean	701.03	34.17						98.28	1.45
	Standard error of cultivar mean	116.53	.92						5.68	.22
	Coefficient of variation (%)	33.25	5.36						11.57	30.91
	5% LSD Cultivar means (*****=ns)	331.93	2.61						16.19	.64

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
62	York	2.00		39.75	6.00	24.35	2.00		44.1	17.2
51	Celest	1.00		37.25	16.50	28.15	3.25		43.2	18.2
32	Columbus	1.00		38.00	15.75	25.55	2.75		46.3	19.1
60	Kent	1.25		35.00	16.00	27.25	4.25		44.9	19.0
21	Calland	1.00		33.75	15.00	23.50	4.25		46.5	18.5
56	Coles	2.25		28.50	12.25	26.10	4.25		47.3	22.0
38	McCall	1.50		33.25	7.25	19.35	4.50		45.3	23.2
61	Cumberland	1.25		31.50	10.25	19.00	4.25		45.6	21.5
59	Will	1.75		27.00	9.50	23.05	4.50		46.8	21.6
14	Williams	1.25		33.75	11.25	23.05	4.50		46.1	19.6
50	DeSoto	1.00		38.75	14.75	22.45	4.50		45.7	19.6
57	Corsoy 79	2.00		38.75	7.00	20.05	5.00		46.7	23.4
58	Williams 79	1.00		30.50	13.00	22.65	3.75		46.2	19.5
36	Evans	1.75		41.25	6.25	21.05	4.75		45.8	25.5
55	Harlon	2.00		26.25	12.00	22.10	5.00		47.1	24.1
54	Chippewa 64	1.00		45.25	15.00	19.15	5.00		46.9	23.6
	Grand mean	1.44		34.91	11.73	22.92	4.16			
	Standard error of cultivar mean	.23		3.91	1.05	1.58	.33			
	Coefficient of variation (%)	31.54		22.41	17.96	13.75	15.76			
	5% LSD Cultivar means (*****=ns)	.65		*****	3.00	4.49	.93			

Table 14. Experiment 812, 1980

Country: AZORES (PORTUGAL) Latitude: 36° 58′ N Zone: 10
Region: EUROPE Longitude: 25° 8′ W Elevation: 195 m

Site: SANTA MARIA, AZORES
Cooperator(s): FRANCISCO DE CHAVES M.

Date planted: May 12, 1980 Date harvested: August 1980
Soil type: sand 32%, silt 15%, clay 53%, pH 7.0
Fertilizer used (kg/ha): N 25, P 25, K 25
Amount of moisture: 232 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
47	PK-73-94	1372.77	91.00		4.00	3.75	60.00	11.67 (3)	70.00	1.00
44	Foster	1363.61	89.00		4.00	3.25	68.75	13.33 (3)	69.75	1.25
50	DeSoto	1333.60 (3)	55.00		4.00	2.50	71.25	5.00 (1)	50.00	1.00
49	Centennial	1283.59	78.50		4.00	3.25	68.75	17.50 (2)	73.75	1.25
43	Alamo	1250.25			4.00	3.50	66.25	12.50 (2)	78.75	1.00
51	Celest	1202.46 (3)	77.00		4.00	2.75	60.00	15.00 (1)	62.50	1.00
48	Gail	1068.96	77.00		4.00	3.75	66.25	13.75	68.75	1.00
13	Bossier	979.36	80.00		4.00	3.75	58.75	10.00 (1)	67.00	1.25
37	G 2120	833.50	92.00		4.00	3.75	63.75	20.00 (3)	75.00	1.25
18	Forrest	790.57	77.00		4.00	3.00	80.00	13.33 (3)	77.50	1.50
	Grand mean	1141.54	79.61		4.00	3.32	66.37	13.91	69.30	1.15
	Standard error of cultivar mean	518.39	4.47		0.00	.44	8.63	6.73	2.43	.18
	Coefficient of variation (%)	45.41	11.22		0.00	26.25	25.99	48.41	7.02	31.31
	5% LSD Cultivar means (*****=ns)	*****	13.04		0.00	*****	*****	*****	7.06	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
47	PK-73-94	1.00	269.25	49.75	22.00	16.52			42.4	18.8
44	Foster	1.00	264.00	32.00	16.75				44.8	20.6
50	DeSoto	1.00	288.75	28.50	9.75	18.42			43.1	18.1
49	Centennial	1.09	288.00	31.75	16.50				44.6	19.4
43	Alamo	1.00	284.00	39.25	19.50				46.5	18.9
51	Celest	1.00	289.75	18.75	18.75	22.55			43.6	18.3
48	Gail	1.00	257.25	28.25	17.50	18.92			44.1	18.3
13	Bossier	1.00	238.50	31.75	20.50				42.9	19.8
37	G 2120	1.00	247.25	34.75	19.50				47.5	15.1
18	Forrest	1.00	273.25	41.75	21.00				42.3	19.7
	Grand mean	1.00	270.00	33.65	18.17	19.11				
	Standard error of cultivar mean	0.00	12.15	5.69	1.87	1.14				
	Coefficient of variation (%)	0.00	9.00	33.80	20.58	11.92				
	5% LSD Cultivar means (*****=ns)	0.00	*****	*****	5.43	3.64				

Table 15. Experiment 306, 1981

Country: AZORES (PORTUGAL) Latitude: 38° 40′ N Zone: 7
Region: EUROPE Longitude: 27° 13′ W Elevation: 160 m

Site: VINHA BRAVA: TERCEIRA
Cooperator(s): ANTONIO F. CARVAO, LUIS TADEAU DUHE

Date planted: April 10, 1981 Date harvested: August 1981
Fertilizer used (kg/ha): N 25.0, P 26.4, K 24.9

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
58	Williams 79	1958.72	47.50	150.25		2.75		17.50	60.37	1.50
51	Celest	1948.31	79.00	173.00		3.00		52.50	53.55	1.00
59	Will	1683.67	60.00	149.50		2.50		51.25	64.60	1.50
61	Cumberland	1625.32	67.25	152.50		3.00		42.50	63.70	1.25
60	Kent	1469.04	74.00	178.50		2.75		38.75	58.55	2.00
73	Century	1446.12	56.50	140.75		2.75		63.75	53.65	1.00
71	Hodgson 78	1394.03	47.00	125.25		2.25		47.50	46.82	1.00
50	DeSoto	1314.01	72.50	175.00		2.25		30.00	55.67	1.00
69	Essex	1271.09	77.50	150.50		3.25		28.75	52.22	1.25
72	Amcor	1171.07	53.75	139.25		2.50		23.75	50.62	1.00
35	Crawford	1164.82	69.75	164.50		2.50		31.25	49.85	1.25
36	Evans	1137.73	42.50	123.75		4.00		28.75	52.05	1.00
70	Hardin	996.03	46.75	129.00		3.00		12.50	58.27	1.50
38	McCall	977.28	47.25	128.75		4.50		11.25	56.10	1.00
57	Corsoy 79	648.05	57.25	139.50		2.00		25.00	45.50	1.00
74	Pella	535.52	58.50	146.50		3.75		5.00	46.97	1.25
	Grand mean	1296.30	59.81	147.91		2.92		31.87	54.28	1.22
	Standard error of cultivar mean	508.09	1.49	6.34		.76		17.76	6.62	.35
	Coefficient of variation (%)	78.39	4.98	8.58		51.99		111.41	24.39	57.29
	5% LSD Cultivar means (*****=ns)	*****	4.25	18.07		*****		*****	*****	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
58	Williams 79	1.25	135.50	30.15	12.15	21.35	1.50			
51	Celest	1.50	130.00	37.85	13.75	21.27	1.75			
59	Will	1.25	116.50	37.72	11.30	23.05	3.00			
61	Cumberland	1.50	108.75	24.70	13.15	24.77	2.50			
60	Kent	1.75	122.75	42.65	11.35	23.65	2.00			
73	Century	1.50	116.75	29.65	9.37	20.37	2.25			
71	Hodgson 78	1.75	118.75	28.62	7.92	21.77	2.25			
50	DeSoto	2.25	120.25	27.35	8.57	21.35	2.25			
69	Essex	1.00	101.00	23.65	8.97	20.90	2.75			
72	Amcor	2.00	128.50	23.05	8.90	20.97	2.75			
35	Crawford	1.25	111.50	29.40	8.45	20.52	2.75			
36	Evans	1.25	92.50	30.85	5.72	22.57	2.75			
70	Hardin	2.00	110.25	25.85	9.80	21.27	3.25			
38	McCall	2.00	137.50	27.95	7.60	21.07	2.25			
57	Corsoy 79	3.00	117.25	23.70	7.27	22.45	2.75			
74	Pella	3.50	112.50	21.65	7.02	20.70	3.25			
	Grand mean	1.80	117.52	29.05	9.46	21.75	2.50			
	Standard error of cultivar mean	.52	14.65	5.26	2.75	1.52	.51			
	Coefficient of variation (%)	57.67	24.94	36.18	58.16	13.93	40.77			
	5% LSD Cultivar means (*****=ns)	*****	*****	*****	*****	*****	*****			

Table 16. Experiment 724, 1980

Country: BANGLADESH
Region: ASIA
Latitude: 24° 42′ N
Longitude: 90° 24′ E
Zone: 7
Elevation: 18.3 m

Site: MYMENSINGH, INA FARMS
Cooperator(s): A. J. MIAH, M. L. DAS, ATAUR RAHMAN

Date planted: November 11, 1980
Date harvested: February 1981
Soil type: sand 10%, silt 66%, clay 24%, pH 6.75
Fertilizer used (kg/ha): N 25, P 25, K 25
Amount of moisture: 143 mm
Number of irrigations: 1

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
9	Jupiter	1398.07	48.00	125.50	1.00	1.00	93.00	89.75	43.05	2.00
7	ICA Tunia	1321.60	45.25	125.25	1.00	1.50	92.50	88.50	30.15	1.00
45	ICA L-109	1111.01	70.00	141.50	2.00	1.00	93.25	90.00	50.48	3.00
2	UFV-1	1090.13	44.50	103.00	1.75	1.50	93.75	90.25	31.55	2.00
37	G 2120	1048.71	77.00	142.75	2.25		92.50	88.75	80.30	4.00
19	Davis	980.95	45.25	108.00	1.25	1.25	93.50	90.75	28.70	1.00
3	SJ-2	932.06	45.25	125.00	2.00	1.50	95.50	91.25	36.95	2.00
41	UFV-1 (BP-2)	908.56	43.50	125.00	1.50	1.50	92.50	91.25	34.50	2.00
39	IGH 23	901.39	68.50	131.25	1.00	1.25	93.50	90.50	53.70	3.00
40	IGH 24	831.33	68.75	128.25	1.50	1.50	94.25	89.50	55.43	3.00
8	ICA Caribe	779.32	42.75	103.00	1.75	2.25	92.50	90.00	26.68	1.00
14	Williams	615.12	37.25	100.25	1.75	1.75	92.50	91.00	20.48	1.00
44	Foster	569.91	36.50	94.75	1.75	2.00	93.00	90.75	21.95	1.00
43	Alamo	552.03	66.75	125.25	1.75	2.00	94.00	91.25	31.63	1.00
10	Improved Pelican	516.39	47.50	105.75	1.75	2.25	93.25	92.00	30.23	1.50
	Grand mean	903.77	52.45	118.97	1.60	1.48	93.30	90.37	38.38	1.90
	Standard error of cultivar mean	77.18	.55	.59	.26	.24	1.35	1.11	1.22	.07
	Coefficient of variation (%)	17.08	2.09	.99	32.85	32.73	2.90	2.45	6.35	7.85
	5% LSD Cultivar means (*****=ns)	220.27	1.57	1.68	.75	.69	*****	*****	3.48	.21

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
9	Jupiter	1.00	184.25	19.65	30.13	17.80	2.00	89.00		
7	ICA Tunia	2.00	185.50	17.28	19.50	20.00	1.00	100.00		
45	ICA L-109	2.00	190.50	40.35	36.48	9.65	2.00	91.00		
2	UFV-1	2.00	160.50	15.65	21.98	15.55	1.00	100.00		
37	G 2120	3.00	170.25	52.68	65.25	6.83	4.00	79.75		
19	Davis	1.00	195.00	11.83	17.48	14.95	1.00	93.00		
3	SJ-2	2.00	181.25	28.03	24.95	13.13	1.00	99.00		
41	UFV-1 (BP-2)	2.00	190.50	14.33	21.08	16.93	2.00	96.00		
39	IGH 23	2.00	189.75	26.00	40.30	17.00	1.00	95.00		
40	IGH 24	2.00	163.50	23.38	40.93	15.08	1.00	99.00		
8	ICA Caribe	2.00	173.75	17.50	16.73	11.38	3.00	84.00		
14	Williams	1.00	186.00	5.80	9.03	17.40	2.00	100.00		
44	Foster	3.00	188.75	9.65	9.95	13.43	2.00	96.00		
43	Alamo	2.00	190.50	16.90	24.05	14.00	2.00	93.00		
10	Improved Pelican	2.00	192.50	13.58	19.15	14.50	2.00	95.50		
	Grand mean	1.93	182.83	20.84	26.46	14.51	1.80	94.02		
	Standard error of cultivar mean		7.24	2.50	1.29	.26		1.98		
	Coefficient of variation (%)		7.92	24.03	9.72	3.54		4.21		
	5% LSD Cultivar means (*****=ns)		20.67	7.14	3.67	.73		5.65		

Table 17. Experiment 214, 1981

Country: BANGLADESH Latitude: 24° N Zone: 7
Region: ASIA Longitude: 89° E Elevation: 7 m

Site: REGIONAL AGRIC. RESEARCH STATION, ISHURDI, PABNA
Cooperator(s): M. D.. OBAIDUL ISLAM, M. KHANUM, M. A. KHALEQUE

Date planted: November 11, 1981 Date harvested: March 1982
Soil type: silt loam

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
53	Ware	1760.77	60.75	120.25	4.00	4.00	61.00	90.00	41.67	2.50
49	Centennial	1730.35	58.25	115.75	4.50	3.00	26.75	93.33 (3)	32.17	1.75
50	DeSoto	1727.85	53.75	117.25	4.00	4.00	68.25	92.50	43.67	2.25
35	Crawford	1712.43	64.75	121.75	4.00	4.00	76.50	92.25	41.02	2.50
44	Foster	1664.92	55.75	116.50	4.25	4.00	56.25	95.00	34.82	1.75
75	Braxton	1598.24	57.75	114.25	4.00	4.00	66.25	97.50	45.57	2.00
48	Gail	1575.31	55.00	118.75	4.00	4.00	74.75	92.25	36.42	1.75
47	PK-73-94	1533.64	53.50	114.75	4.00	3.00	63.75	94.67 (3)	38.52	1.50
19	Davis	1512.39	54.25	119.50	4.00	4.00	56.75	78.00	39.60	2.00
2	UFV-1	1485.30	63.75	119.75	4.25	4.00	49.25	95.00	41.32	1.75
58	Williams 79	1479.46	54.50	112.25	4.00	4.00	68.75	86.00	38.12	2.25
43	Alamo	1382.36	60.00	117.25	4.00	4.00	58.25	87.50	44.65	2.25
10	Improved Pelican	1381.53	53.75	114.50	4.00	4.00	59.25	91.25	37.02	2.00
52	Bay	1341.93	60.00	114.25	4.00	3.00	71.75	86.33 (3)	44.35	2.25
51	Celest	1264.00	60.00	110.75	4.00	4.00	67.25	87.50	55.40	2.75
69	Essex	1066.05	54.25	108.75	4.00	4.00	58.75	78.50	32.50	1.25
	Grand mean	1513.53	57.50	116.02	4.06	3.81	61.47	89.77	40.43	2.03
	Standard error of cultivar mean	337.22	3.66	4.12	.12	.40	10.87	10.08	7.83	.47
	Coefficient of variation (%)	44.56	12.73	7.10	5.80	21.15	35.37	11.22	38.72	46.67
	5% LSD Cultivar means (*****=ns)	*****	*****	*****	*****	*****	*****	*****	*****	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
53	Ware	1.75	127.50	42.05	5.40	15.75	2.25	69.00	42.1	21.8
49	Centennial	1.00	126.25	38.67	6.40	16.30	2.00	66.75	44.0	20.7
50	DeSoto	1.25	141.50	33.62	8.02	16.92	2.75	73.25	36.1	23.7
35	Crawford	1.00	144.50	29.75	7.20	16.77	2.50	68.25	38.2	23.5
44	Foster	1.00	120.00	31.42	6.42	14.85	2.25	75.00	42.4	21.2
75	Braxton	1.25	112.25	36.67	10.15	14.47	2.75	76.00	43.0	21.6
48	Gail	1.25	128.50	29.17	7.50	15.10	2.25	77.00	39.6	23.7
47	PK-73-94	1.25	141.00	25.00	8.62	17.40	2.75	67.25	41.4	21.3
19	Davis	1.50	130.00	31.62	7.12	16.30	2.50	77.50	40.2	24.0
2	UFV-1	1.00	117.00	40.27	6.75	15.57	2.00	75.75	41.4	23.2
58	Williams 79	1.50	138.25	23.85	6.37	16.45	3.00	67.50	39.5	24.1
43	Alamo	1.00	120.75	28.57	9.30	14.77	3.00	73.75	36.9	24.5
10	Improved Pelican	1.50	136.25	20.20	7.67	17.70	3.50	72.50	40.3	24.1
52	Bay	1.00	145.75	21.60	10.37	16.55	2.75	70.75	38.2	24.4
51	Celest	1.25	133.00	30.37	10.52	15.17	2.75	76.75	35.4	24.7
69	Essex	1.00	148.25	18.00	6.67	15.70	3.50	57.50	39.9	23.4
	Grand mean	1.22	131.92	30.05	7.78	15.99	2.66	71.53		
	Standard error of cultivar mean	.25	8.61	6.47	1.22	1.00	.38	4.18		
	Coefficient of variation (%)	41.37	13.06	43.03	31.23	12.50	28.44	11.68		
	5% LSD Cultivar means (*****=ns)	*****	*****	*****	*****	*****	*****	*****		

Table 18. Experiment 235, 1981

Country: BANGLADESH
Region: ASIA
Latitude: 23° N
Longitude: 91° 25′ E
Zone: 7
Elevation: 10 m

Site: FENI NOAKHALI
Cooperator(s): M.C.C. (MENNONITE CENTRAL COMMITTEE)

Date planted: January 29, 1982
Date harvested: April 1982
Soil type: sand 22%, silt 62%, clay 16%, pH 6.6, grey silt loam flood plain
Fertilizer used (kg/ha): P 26.4, K 24.9
Amount of moisture: 374 mm
Number of irrigations: 3 (150 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
47	PK-73-94	2270.61	41.50	98.00	3.25	2.00				
35	Crawford	2253.94	37.50	93.00	2.75	2.00				
75	Braxton	2253.94	41.00	90.75	3.50	2.50				
51	Celest	2220.61	46.00	95.00	2.75	2.00				
69	Essex	2049.79	38.75	97.00	3.50	2.50				
19	Davis	1999.80	46.00	110.00	4.00	3.25				
48	Gail	1995.63	44.00	98.50	3.75	3.00				
43	Alamo	1958.14	66.00	96.00	3.75	2.75				
10	Improved Pelican	1920.64	38.00	89.25	2.50	2.00				
52	Bay	1895.64	41.00	97.00	3.75	2.50				
58	Williams 79	1645.67	35.25	89.00	2.25	1.50				
44	Foster	1604.01	38.00	88.50	3.50	2.25				
50	DeSoto	1562.34	35.00	89.00	4.00	2.00				
53	Ware	1408.19	34.00	84.00	4.00	4.00				
49	Centennial	979.07	40.00	90.00	3.50	2.75				
2	UFV-1	683.26	48.25	142.50	3.75	2.75				
	Grand mean	1793.83	41.89	96.72	3.41	2.48				
	Standard error of cultivar mean	141.16	.32	.53	.33	.30				
	Coefficient of variation (%)	15.74	1.53	1.10	19.42	24.52				
	5% LSD Cultivar means (*****=ns)	402.08	.92	1.52	.94	.87				

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
47	PK-73-94									
35	Crawford									
75	Braxton									
51	Celest									
69	Essex									
19	Davis									
48	Gail									
43	Alamo									
10	Improved Pelican									
52	Bay									
58	Williams 79									
44	Foster									
50	DeSoto									
53	Ware									
49	Centennial									
2	UFV-1									
	Grand mean									
	Standard error of cultivar mean									
	Coefficient of variation (%)									
	5% LSD Cultivar means (*****=ns)									

Table 19. Experiment 913, 1980

Country: BHUTAN
Region: ASIA
Site: BUMTHANG
Cooperator(s): BURGIN
Latitude: 27° N
Longitude: 91° E
Zone: 9
Elevation: 2650 m
Date planted: April 30, 1980
Date harvested:
Fertilizer used (kg/ha): N 25, P 25
Amount of moisture: 737.3 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
50	DeSoto	729.37		167.75		3.00		71.25	39.50	1.25
56	Coles	712.50		157.25		4.25		56.25	36.75	1.25
58	Williams 79	646.87		150.25		3.00		56.25	48.50	1.75
51	Celest	578.12		166.50		3.00		66.25	49.75	1.50
59	Will	533.12		145.50		2.75		70.00	41.25	1.50
14	Williams	493.75		142.75		3.25		63.75	39.00	1.50
32	Columbus	415.62		170.50		2.25		58.75	41.75	1.50
21	Calland	407.91		159.50		4.00		72.50	39.00	1.75
60	Kent	385.94		193.75		4.00		65.00	38.75	1.50
55	Harlon	361.87		151.00		3.50		60.00	40.25	1.50
38	McCall	323.12		159.25		4.00		33.75	32.25	1.50
57	Corsoy 79	299.37		177.25		2.25		52.50	31.75	1.75
61	Cumberland	271.25		175.75		2.00		58.75	34.25	1.50
54	Chippewa 64	160.94		156.50		4.00		37.50	43.50	2.00
36	Evans	147.81		160.50		3.50		31.25	28.25	1.50
62	York	132.81		196.00		3.50		73.75	44.75	1.25
	Grand mean	412.53		164.38		3.27		57.97	39.33	1.53
	Standard error of cultivar mean	174.28		7.87		.48		10.23	5.20	.26
	Coefficient of variation (%)	84.50		9.58		29.66		35.30	26.47	34.16
	5% LSD Cultivar means (*****=ns)	*****		22.43		1.38		*****	*****	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
50	DeSoto	2.75	217.00	15.30	6.68	17.18	1.25			
56	Coles	2.50	151.00	5.00	5.25	21.53	2.25			
58	Williams 79	1.25	132.68	13.00	6.00	19.45	2.00			
51	Celest	3.25	152.68	29.75	4.25	16.90	2.75			
59	Will	3.25	195.30	15.68	8.68	19.38	2.75			
14	Williams	1.50	158.75	9.25	9.00	19.68	2.00			
32	Columbus	2.75	116.25	36.00	7.50	15.53	2.00			
21	Calland	2.50	153.00	10.50	7.50	19.30	3.00			
60	Kent	1.50	124.00	14.25	6.00	17.23	2.00			
55	Harlon	3.50	187.50	8.00	7.25	19.30	2.00			
38	McCall	2.00	112.50	7.00	5.50	15.90	2.00			
57	Corsoy 79	2.25	168.50	8.00	5.50	17.83	3.00			
61	Cumberland	2.50	107.50	11.25	6.50	19.20	1.25			
54	Chippewa 64	1.75	127.00	14.25	8.00	15.88	3.75			
36	Evans	2.50	158.50	7.25	5.50	19.25	2.50			
62	York	2.50	122.25	15.00	6.75	15.30	2.00			
	Grand mean	2.39	149.03	13.72	6.62	18.05	2.28			
	Standard error of cultivar mean	.77	18.40	3.06	.73	.93	.27			
	Coefficient of variation (%)	64.34	24.69	44.61	22.07	10.33	23.95			
	5% LSD Cultivar means (*****=ns)	*****	52.41	8.72	2.08	2.66	.78			

Table 20. Experiment 116, 1981

Country: BOLIVIA
Region: SOUTH AMERICA
Latitude: 21° 57′ S
Longitude: 63° 39′ W
Zone: 8
Elevation: 600 m

Site: ESTACION EXPERIMENTAL "GRAN CHACO"
Cooperator(s): ROBERTO DELGADILLO VELIZ, JORGE ALDUNATE

Date planted: December 10, 1981 Date harvested: April 1982
Soil type: sand 15.4%, silt 36.2%, clay 48.4%, pH 6.1, arcilloso, clay soil
Fertilizer used (kg/ha): N 25.0, P 25.0, K 25.0
Amount of moisture: 1406 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
254	Cristalina	4138.33	64.00	144.00	3.25	1.50	78.75	88.75	103.35	3.25
40	IGH 24	3975.79	78.00	146.00	3.25	1.50	70.00	85.00	105.70	2.75
46	Ecuador 2	3954.96	49.00	129.00	3.25	2.75	76.25	70.00	82.45	1.25
2	UFV-1	3888.28	57.00	138.00	2.25	1.50	90.00	85.00	87.00	2.00
41	UFV-1 (BP-2)	3792.42	47.00	132.00	2.75	1.50	80.00	61.25	129.05	3.00
8	ICA Caribe	3546.54	73.00	146.00	3.50	2.50	76.25	60.00	132.00	4.00
43	Alamo	3471.53	64.00	138.00	3.50	2.00	77.50	87.50	93.15	2.75
7	ICA Tunia	3459.02	42.00	120.00	3.25	1.50	78.75	72.50	102.30	2.00
10	Improved Pelican	3392.34	47.00	112.00	2.75	1.25	83.75	81.25	79.80	2.00
44	Foster	3384.01	38.00	112.00	3.50	2.00	72.50	55.00	51.17	1.00
39	IGH 23	3221.48	65.00	138.00	3.25	2.75	82.50	66.25	117.75	3.00
9	Jupiter	3108.95	73.00	146.00	3.25	2.50	80.00	75.00	106.75	3.25
37	G 2120	2875.57	65.00	129.00	3.25	1.50	78.75	80.00	128.12	4.00
19	Davis	2854.74	44.00	105.00	2.25	1.50	90.00	76.25	60.67	1.00
253	Bossier Local	2708.87	38.00	112.00	2.75	2.25	85.00	75.00	53.77	1.25
58	Williams 79	1416.95	36.00	102.75	2.25	2.75	75.00	53.75	49.92	1.00
	Grand mean	3324.36	55.00	128.11	3.02	1.95	79.69	73.28	92.69	2.34
	Standard error of cultivar mean	185.08	0.00	.56	.29	.38	4.22	6.05	3.79	.19
	Coefficient of variation (%)	11.13	0.00	.88	19.20	38.51	10.58	16.50	8.19	16.45
	5% LSD Cultivar means (*****=ns)	527.19	0.00	1.60	.82	1.07	*****	17.23	10.81	.55

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
254	Cristalina	1.00	111.25	144.75	12.75	15.17	2.00	80.00		
40	IGH 24	1.00	71.50	157.75	12.50	18.50	2.00	90.00	37.8	21.0
46	Ecuador 2	1.00	95.00	100.95	15.15	14.60	2.00	68.00	40.5	22.3
2	UFV-1	1.00	134.25	102.70	18.30	15.10	2.00	84.00	41.4	20.6
41	UFV-1 (BP-2)	1.00	105.75	106.30	19.75	12.90	2.00	85.00	38.9	21.5
8	ICA Caribe	2.00	93.50	132.85	15.70	15.80	2.00	88.00	44.0	18.8
43	Alamo	1.00	129.50	96.90	23.35	13.70	2.00	78.00	41.0	21.7
7	ICA Tunia	1.00	138.25	53.00	16.37	17.50	2.00	70.00	38.5	21.5
10	Improved Pelican	1.00	116.50	77.95	18.12	16.20	2.00	75.00		
44	Foster	2.00	150.75	46.97	9.27	17.20	2.00	70.00	41.4	21.3
39	IGH 23	1.00	88.00	100.35	20.15	17.20	2.00	82.00	42.5	19.2
9	Jupiter	1.00	61.00	146.30	16.10	16.80	2.00	88.00	40.1	21.0
37	G 2120	2.00	142.75	159.62	15.87	8.00	2.00	80.00	43.7	18.1
19	Davis	2.00	95.25	80.20	10.65	16.60	2.00	70.00	40.0	21.8
253	Bossier Local	1.00	132.75	46.20	11.30	16.10	2.00	70.00	41.5	20.7
58	Williams 79	2.00	133.50	22.33	5.37	21.20	4.00	45.00	42.7	20.6
	Grand mean	1.31	112.47	98.45	15.05	15.79	2.12	76.44		
	Standard error of cultivar mean	0.00	6.84	10.32	1.63	.01	0.00	0.00		
	Coefficient of variation (%)	0.00	12.17	20.97	21.70	.08	0.00	0.00		
	5% LSD Cultivar means (*****=ns)	0.00	19.49	29.40	4.65	.02	0.00	0.00		

Table 21. Experiment 121, 1981

Country: BOLIVIA
Region: SOUTH AMERICA
Latitude: 17° 14′ S
Longitude: 63° 10′ W
Zone: 4
Elevation: 320 m

Site: EST. EXP. AGRICOLA DE SAAVADRA
Cooperator(s): HERBERT ZURITA, O. A. TEJERINA

Date planted: December 5, 1981
Date harvested: April 1982
Soil type: pH 7.0
Amount of moisture: 820 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
2	UFV-1	3734.91	40.00	130.00					52.50	1.00
46	Ecuador 2	3262.74	46.00	128.75					74.25	1.00
43	Alamo	3191.05	39.25	128.25					58.50	1.00
9	Jupiter	3028.11	53.00	127.75					80.00	1.00
39	IGH 23	2961.43	48.25	128.50					92.25	1.75
41	UFV-1 (BP-2)	2810.56	38.00	130.00					106.25	3.50
40	IGH 24	2661.37	56.00	135.00					97.00	2.00
44	Foster	2615.94	29.00	121.75					27.50	1.00
7	ICA Tunia	2552.18	53.00	122.50					84.25	1.00
3	SJ-2	2445.91	39.00	122.75					84.75	3.25
10	Improved Pelican	2313.80	40.00	128.00					113.25	2.75
8	ICA Caribe	2204.61	51.25	142.50					122.50	3.00
37	G 2120	2150.43	53.00	130.75					98.75	2.25
19	Davis	2072.91	36.75	122.00					31.00	1.00
13	Bossier	1687.42	29.00	121.00					30.75	1.00
58	Williams 79	668.05	22.00	121.00					40.75	1.00
	Grand mean	2522.59	42.09	127.53					74.64	1.72
	Standard error of cultivar mean	156.34	4.17	2.46					3.89	.31
	Coefficient of variation (%)	12.40	19.80	3.86					10.41	35.56
	5% LSD Cultivar means (*****=ns)	445.32	11.87	7.02					11.07	.87

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
2	UFV-1	1.00	177.75	50.47	10.00	13.47	2.50		41.7	20.3
46	Ecuador 2	1.00	120.25	35.57	11.75	15.85	3.50		41.8	21.8
43	Alamo	1.00	158.50	35.87	11.00	14.75	1.62		40.1	22.4
9	Jupiter	1.00	152.00	40.97	17.00	16.22	3.37		40.8	21.4
39	IGH 23	1.00	129.00	42.72	17.75	14.92	2.62		42.3	20.3
41	UFV-1 (BP-2)	1.00	145.00	38.82	13.50	14.52	1.87		42.1	21.5
40	IGH 24	1.00	137.00	46.35	16.75	14.00	1.62		38.6	21.8
44	Foster	1.00	158.25	30.47	4.75	18.60	3.75		41.3	22.3
7	ICA Tunia	1.00	142.00	32.85	14.00	19.62	3.50		41.2	21.1
3	SJ-2	1.00	142.00	43.55	12.50	13.62	2.37		39.7	21.8
10	Improved Pelican	1.00	146.75	35.52	15.00	15.00	2.62		43.0	20.9
8	ICA Caribe	1.00	128.50	46.00	16.25	14.62	1.87		45.7	19.2
37	G 2120	1.00	191.25	36.67	11.00	7.02	4.12		42.8	19.0
19	Davis	1.00	87.50	22.40	3.50	23.87	3.87		41.9	21.6
13	Bossier	1.00	142.25	26.77	5.00	20.47	3.75		43.7	21.2
58	Williams 79	1.25	141.75	30.17	5.75	24.32	5.00		44.6	20.6
	Grand mean	1.02	143.73	37.20	11.59	16.31	3.00			
	Standard error of cultivar mean	.06	8.00	6.45	1.00	.85	.29			
	Coefficient of variation (%)	12.31	11.13	34.68	17.19	10.39	19.10			
	5% LSD Cultivar means (*****=ns)	*****	22.78	*****	2.84	2.41	.82			

Table 22. Experiment 132, 1981

Country: BRAZIL
Region: SOUTH AMERICA
Latitude: 1° S
Longitude: 52° W
Zone: 1
Elevation: 2 m

Site: JARIEPROJECTA: SAO RAIMUNDO
Cooperator(s): KENNETH G. CASSMAN

Date planted: October 10, 1981 Date harvested: January 1982
Soil type: 4.9% pH, OM 4.0%, P 60. kg/ha, K 250 kg/ha, umbric aquept
Fertilizer used (kg/ha): N 25.0, P 50.0, K 50.0

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
40	IGH 24	4691.19	37.50	116.00					76.25	1.00
9	Jupiter	4205.80	37.00	113.25					62.75	1.00
208	Tropical	4167.92	43.25	110.50					101.50	1.75
2	UFV-1	4118.87	26.25	99.75					35.00	1.00
39	IGH 23	4103.31	36.00	106.25					62.25	1.50
7	ICA Tunia	3928.77	24.25	100.00					70.50	1.00
41	UFV-1 (BP-2)	3815.46	25.25	97.00					84.25	2.00
10	Improved Pelican	3671.03	26.50	91.00					97.75	2.75
46	Ecuador 2	3626.38	28.25	105.25					52.50	1.00
43	Alamo	3503.26	35.25	99.00					45.25	1.00
37	G 2120	3366.26	42.25	96.25					106.25	3.50
3	SJ-2	3215.74	26.25	92.75					69.75	2.00
44	Foster	2939.39	20.25	89.25					30.00	1.00
58	Williams 79	2625.16	18.75	80.50					57.00	1.00
19	Davis	2560.21	23.25	95.25					24.25	1.00
13	Bossier	2553.11	19.50	90.00					27.50	1.00
	Grand mean	3568.24	29.36	98.87					62.67	1.47
	Standard error of cultivar mean	156.94	.15	.63					1.83	.14
	Coefficient of variation (%)	8.80	1.01	1.28					5.84	18.47
	5% LSD Cultivar means (*****=ns)	447.03	.42	1.80					5.22	.39

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
40	IGH 24	1.00	96.00	86.00	8.62	19.90	2.25		43.6	21.9
9	Jupiter	1.00	124.50	65.00	13.12	23.50	1.50		44.2	22.8
208	Tropical	1.00	123.00	81.50	16.82	19.35	1.00		43.2	20.2
2	UFV-1	1.00	157.00	48.50	7.37	20.77	2.00		47.5	19.4
39	IGH 23	1.00	122.50	65.25	11.55	21.80	2.25		46.9	19.4
7	ICA Tunia	1.00	144.75	44.50	11.22	24.27	2.75		41.1	22.1
41	UFV-1 (BP-2)	1.00	138.00	59.00	11.82	19.45	1.25		45.1	20.1
10	Improved Pelican	1.00	134.00	58.50	11.82	17.52	1.00		44.9	21.1
46	Ecuador 2	1.00	114.50	64.00	8.07	22.10	3.50		46.1	20.9
43	Alamo	1.00	129.50	53.50	11.45	18.55	2.25		45.2	21.5
37	G 2120	1.00	140.00	126.50	11.15	8.12	2.50		46.9	16.1
3	SJ-2	1.00	140.00	62.00	11.22	15.27	1.00		42.8	19.7
44	Foster	1.00	131.50	38.75	6.65	20.25	5.00		46.4	20.8
58	Williams 79	1.00	127.00	37.75	9.02	22.45	2.00		43.5	21.5
19	Davis	1.00	134.50	44.50	5.75	21.95	5.00		47.7	21.6
13	Bossier	1.00	130.50	37.00	6.07	20.87	3.25		47.1	19.5
	Grand mean	1.00	130.45	60.77	10.11	19.76	2.41			
	Standard error of cultivar mean	0.00	8.60	5.34	.38	.34	.23			
	Coefficient of variation (%)	0.00	13.19	17.58	7.59	3.48	19.28			
	5% LSD Cultivar means (*****=ns)	0.00	24.51	15.22	1.09	.98	.66			

Table 23. Experiment 127, 1981

Country: BRUNEI
Region: ASIA
Latitude: 4° N
Longitude: 114° 5′ E
Zone: 1
Elevation: 15 m

Site: BIRAY RESEARCH STATION
Cooperator(s): W. T. H. PEREGRINE

Date planted: May 19, 1981
Date harvested: August 1981
Soil type: pH 4.7, mollic, clay loam
Fertilizer used (kg/ha): N 25.0, P 25.0, K 25.0
Amount of moisture: 337.8 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
2	UFV-1	2577.18	34.50	104.00		2.50		90.00	98.87	1.00
19	Davis	2340.05	28.00	90.00		3.75		86.25	83.37	1.75
44	Foster	2337.97	25.00	94.00		1.75		81.25	78.47	1.50
13	Bossier	2267.12	24.25	90.00		1.00		82.50	88.07	1.00
41	UFV-1 (BP-2)	2246.28	31.75	109.00		2.25		80.00	136.70	2.50
7	ICA Tunia	2104.59	30.50	106.00		3.00		75.00	114.75	1.00
43	Alamo	2083.75	34.75	104.00		3.00		91.25	110.92	1.75
58	Williams 79	2033.74	24.50	81.00		2.75		95.00	92.50	1.00
39	IGH 23	1985.40	34.50	109.00		3.75		97.50	123.75	2.50
37	G 2120	1893.71	48.75	98.00		1.00		91.25	132.15	3.00
3	SJ-2	1844.12	34.25	100.00		3.25		97.50	131.30	2.75
46	Ecuador 2	1704.51	34.75	106.00		3.25		91.25	110.07	3.50
9	Jupiter	1677.42	41.00	105.00		3.25		90.00	118.05	1.00
10	Improved Pelican	1552.39	34.50	94.00		2.50		91.25	130.35	2.75
40	IGH 24	1537.81	35.00	111.00		4.00		75.00	122.30	1.25
8	ICA Caribe	1064.80	72.00	140.00		2.25		82.50	144.57	3.75
	Grand mean	1953.18	35.50	102.56		2.70		87.34	113.51	2.00
	Standard error of cultivar mean	202.84	.36	.39		.62		8.81	3.47	.44
	Coefficient of variation (%)	20.77	2.04	.77		45.92		20.18	6.12	44.49
	5% LSD Cultivar means (*****=ns)	577.77	1.03	1.12		1.77		*****	9.90	1.27

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
2	UFV-1	1.00	99.00	28.25		18.10 (1)	3.00 (1)	43.00 (1)		
19	Davis	1.00	99.00	20.00		19.20 (1)	2.00 (1)	74.00 (1)		
44	Foster	1.00	99.00	23.50		19.00 (1)	1.00 (1)	79.00 (1)		
13	Bossier	1.00	99.00	16.00		19.60 (1)	1.00 (1)	89.00 (1)		
41	UFV-1 (BP-2)	1.00	99.00	48.50		19.10 (1)	4.00 (1)	31.00 (1)		
7	ICA Tunia	1.00	99.00	22.50		21.30 (1)	1.00 (1)	86.00 (1)		
43	Alamo	1.00	99.00	25.50		18.20 (1)	4.00 (1)	47.00 (1)		
58	Williams 79	1.00	99.00	27.00		21.30 (1)	1.00 (1)	77.00 (1)		
39	IGH 23	1.00	99.00	33.50		20.00 (1)	1.00 (1)	64.00 (1)		
37	G 2120	1.00	99.00	66.75		8.10 (1)	1.00 (1)	88.00 (1)		
3	SJ-2	1.00	99.00	26.75		15.40 (1)	2.00 (1)	73.00 (1)		
46	Ecuador 2	1.00	99.00	29.75		19.50 (1)	4.00 (1)	47.00 (1)		
9	Jupiter	1.00	99.00	31.00		24.20 (1)	4.00 (1)	22.00 (1)		
10	Improved Pelican	1.00	99.00	44.75		16.10 (1)	1.00 (1)	78.00 (1)		
40	IGH 24	1.00	99.00	34.00		17.70 (1)	2.00 (1)	67.00 (1)		
8	ICA Caribe	1.00	99.00	48.50		16.00 (1)	4.00 (1)	38.00 (1)		
	Grand mean	1.00	99.00	32.89		18.30	2.25	62.69		
	Standard error of cultivar mean	0.00	0.00	6.23		3.50	1.34	21.58		
	Coefficient of variation (%)	0.00	0.00	37.89		19.13	59.63	34.42		
	5% LSD Cultivar means (*****=ns)	0.00	0.00	17.75		*****	*****	*****		

Table 24. Experiment 716, 1980

Country: BURMA
Region: ASIA
Latitude: 20° 45′ N
Longitude: 90° 50′ E
Zone: 6
Elevation: 1140 m

Site: HEHO SEED FARM
Cooperator(s): U KYAW, HLA SHWE, MAUNG KGAN, M. THEIN

Date planted: August 24, 1980
Date harvested: November 1980
Soil type: red loam, pH 5.6
Fertilizer used (kg/ha): N 25, P 50, K 25
Amount of moisture: 458 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
41	UFV-1 (BP-2)	1335.78	31.75	82.00	1.00	2.00	92.50	21.25	23.70	
37	G 2120	1167.79	45.00	90.25	1.00	1.00	91.25	87.50	36.25	
14	Williams	1139.10	30.00	73.00	1.00	1.50	81.25	5.00	15.50	
3	SJ-2	1024.37	44.50	89.50	1.25	2.75	87.50	51.25	29.40	
10	Improved Pelican	930.13	33.50	82.75	1.50	1.75	92.50	17.50	22.45	
45	ICA L-109	921.94	43.75	90.50	1.00	1.25	85.00	82.50	44.60	
43	Alamo	901.45	43.75	85.25	1.25	2.00	73.75	45.00	19.78	
39	IGH 23	868.67	42.75	85.25	1.00	1.50	81.25	66.25	37.55	
19	Davis	782.62	30.00	62.50	1.25	1.75	86.25	12.50	20.00	
2	UFV-1	762.13	30.50	79.00	1.25	2.50	88.75	31.25	18.35	
7	ICA Tunia	737.55	31.00	79.50	1.00	1.75	87.50	25.00	19.75	
40	IGH 24	712.96	43.75	91.50	1.00	1.50	83.75	80.00	25.75	
9	Jupiter	639.21	45.00	90.00	1.00	1.75	87.50	37.50	34.20	
44	Foster	471.21	30.50	75.00	1.00	3.25	78.75	12.50	16.13	
8	ICA Caribe	266.34	39.50	85.25	1.00	1.75	86.25	17.50	35.10	
	Grand mean	844.08	37.68	82.75	1.10	1.87	85.58	39.50	26.57	
	Standard error of cultivar mean	116.41	1.04	3.28	.15	.43	5.02	6.20	1.27	
	Coefficient of variation (%)	27.58	5.54	7.93	26.86	46.07	11.73	31.40	9.53	
	5% LSD Cultivar means (*****=ns)	332.24	2.98	9.36	*****	*****	*****	17.70	3.61	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
41	UFV-1 (BP-2)		169.00	3.45	5.63	10.00	1.75	85.00		
37	G 2120		248.50	4.00	7.85	5.00	5.00	87.50		
14	Williams		122.75	2.00	3.00	10.00	2.25	75.00		
3	SJ-2		231.50	4.05	5.83	10.00	3.00	93.75		
10	Improved Pelican		197.25	2.50	3.75	9.25	3.75	90.00		
45	ICA L-109		166.00	2.48	5.90	10.00	4.00	80.00		
43	Alamo		181.50	2.80	4.75	10.00	2.25	81.25		
39	IGH 23		182.50	2.45	5.15	10.00	2.00	86.25		
19	Davis		187.50	2.45	3.28	10.00	2.00	88.75		
2	UFV-1		133.25	3.15	3.25	10.00	1.75	70.00		
7	ICA Tunia		140.75	1.95	6.55	13.50	2.00	80.00		
40	IGH 24		173.00	2.40	4.08	10.00	3.00	73.75		
9	Jupiter		178.00	2.10	4.55	5.00	5.00	83.75		
44	Foster		143.00	2.50	3.68	10.00	3.00	82.50		
8	ICA Caribe		135.25	1.95	5.05	7.00	2.50	72.50		
	Grand mean		172.65	2.68	4.82	9.32	2.88	82.00		
	Standard error of cultivar mean		13.37	.43	.78	.15	.19	3.56		
	Coefficient of variation (%)		15.48	32.25	32.33	3.19	13.00	8.68		
	5% LSD Cultivar means (*****=ns)		38.15	1.23	2.22	.42	.53	10.16		

Table 25. Experiment 218, 1981

Country: BURUNDI
Region: AFRICA
Latitude: 4° 0′ S
Longitude: 30° 4′ E
Zone: 3
Elevation: 1260 m

Site: MOSSO
Cooperator(s): P. DEVOS AND K. KABENGELE

Date planted: November 11, 1981 Date harvested: February 1982
Soil type: sand 24.8%, silt 11.9%, clay 63.3%, OM 2.4%, pH 6.9, hygro xeroferrisol
Substitute cultivar: Ogden

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
2	UFV-1	2513.84 (1)	37.00 (1)	118.00 (1)					40.00 (1)	1.00 (1)
43	Alamo	1977.06 (1)	55.00 (1)	118.00 (1)					42.00 (1)	1.00 (1)
51	Celest	1723.68 (1)	29.00 (1)	92.00 (1)					24.00 (1)	1.00 (1)
69	Essex	1708.67 (1)	29.00 (1)	92.00 (1)					18.00 (1)	1.00 (1)
35	Crawford	1610.32 (1)	29.00 (1)	92.00 (1)					32.00 (1)	1.00 (1)
52	Bay	1463.63 (1)	29.00 (1)	101.00 (1)					20.00 (1)	1.00 (1)
47	PK-73-94	1418.62 (1)	29.00 (1)	92.00 (1)					22.00 (1)	1.00 (1)
50	DeSoto	1291.92 (1)	29.00 (1)	92.00 (1)					25.00 (1)	1.00 (1)
19	Davis	1165.23 (1)	37.00 (1)	101.00 (1)					20.00 (1)	1.00 (1)
256	Ogden	1125.22 (1)	29.00 (1)	92.00 (1)					31.00 (1)	1.00 (1)
48	Gail	1066.88 (1)	34.00 (1)	92.00 (1)					20.00 (1)	1.00 (1)
49	Centennial	1011.87 (1)	29.00 (1)	77.00 (1)					18.00 (1)	1.00 (1)
58	Williams 79	830.17 (1)	29.00 (1)	79.00 (1)					25.00 (1)	1.00 (1)
44	Foster	786.82 (1)	29.00 (1)	77.00 (1)					20.00 (1)	1.00 (1)
53	Ware	738.48 (1)	29.00 (1)	79.00 (1)					17.00 (1)	1.00 (1)
75	Braxton	695.14 (1)	29.00 (1)	77.00 (1)					22.00 (1)	1.00 (1)
	Grand mean	1320.47	31.94	91.94					24.75	1.00
	Standard error of cultivar mean	500.68	6.79	12.98					7.66	0.00
	Coefficient of variation (%)	37.92	21.25	14.12					30.93	0.00
	5% LSD Cultivar means (*****=ns)	*****	*****	*****					*****	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
2	UFV-1	1.00 (1)	160.00 (1)	47.00 (1)	12.00 (1)	18.00 (1)				
43	Alamo	1.00 (1)	153.00 (1)	45.00 (1)	10.00 (1)	19.00 (1)				
51	Celest	2.00 (1)	103.00 (1)	75.00 (1)	8.00 (1)	20.00 (1)				
69	Essex	2.00 (1)	202.00 (1)	16.00 (1)	4.00 (1)	17.00 (1)				
35	Crawford	1.00 (1)	105.00 (1)	14.00 (1)	4.00 (1)	18.00 (1)				
52	Bay	2.00 (1)	107.00 (1)	25.00 (1)	3.00 (1)	23.00 (1)				
47	PK-73-94	2.00 (1)	185.00 (1)	95.00 (1)	3.00 (1)	17.00 (1)				
50	DeSoto	2.00 (1)	197.00 (1)	84.00 (1)	5.00 (1)	19.00 (1)				
19	Davis	2.00 (1)	72.00 (1)	85.00 (1)	3.00 (1)	18.00 (1)				
256	Ogden	2.00 (1)	141.00 (1)	21.00 (1)	5.00 (1)	20.00 (1)				
48	Gail	2.00 (1)	152.00 (1)	21.00 (1)	2.00 (1)	21.00 (1)				
49	Centennial	2.00 (1)	146.00 (1)	13.00 (1)	4.00 (1)	17.00 (1)				
58	Williams 79	2.00 (1)	164.00 (1)	14.00 (1)	5.00 (1)	18.00 (1)				
44	Foster	2.00 (1)	198.00 (1)	13.00 (1)	5.00 (1)	17.00 (1)				
53	Ware	2.00 (1)	169.00 (1)	9.00 (1)	5.00 (1)	22.00 (1)				
75	Braxton	2.00 (1)	160.00 (1)	16.00 (1)	6.00 (1)	21.00 (1)				
	Grand mean	1.81	150.87	37.06	5.25	19.06				
	Standard error of cultivar mean	.40	37.83	30.57	2.67	1.91				
	Coefficient of variation (%)	22.24	25.07	82.48	50.87	10.04				
	5% LSD Cultivar means (*****=ns)	*****	*****	*****	*****	*****				

Table 26. Experiment 704, 1980

Country: CAMEROON
Region: AFRICA
Latitude: 5° 27′ N
Longitude: 10° 5′ E
Zone: 3
Elevation: 1450 m

Site: DSCHANG
Cooperator(s): J. Y. PRAQUIN

Date planted: April 3, 1980
Date harvested: August 1980
Soil type: sand 39%, silt 32%, clay 29%, pH 5.6
Amount of moisture: 1046.5 mm
Substitute cultivars: Hutton, Cobb, Ransom, Bossier, SJ-239

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
9	Jupiter	3252.73	38.75	115.00					76.25	1.25
7	ICA Tunia	3046.44	31.25	110.00					55.00	1.00
3	SJ-2	2875.57	41.00	110.25					71.25	2.25
43	Alamo	2815.15	37.00	120.00					50.00	1.25
210	SJ-239	2658.86	41.00	109.00					55.00	1.00
2	UFV-1	2596.35	39.25	112.25					36.25	1.00
19	Davis	2467.16	32.00	102.00					36.25	1.00
8	ICA Caribe	2354.64	32.00	107.25					66.25	1.25
37	G 2120	2329.63	46.00	127.00					67.50	3.50
45	ICA L-109	2171.27	44.00	146.00					60.00	2.25
16	Cobb	1817.03	19.75	89.75					26.25	1.00
63	Hutton	1508.63	25.25	88.75					20.00	1.00
44	Foster	1506.55	26.50	85.25					22.50	1.00
15	Ransom	1473.21	26.00	88.00					21.25	1.00
13	Bossier	1391.94	27.50	85.50					21.25	1.00
14	Williams	1262.75	26.25	88.00					30.00	1.00
	Grand mean	2220.50	33.34	105.25					44.69	1.36
	Standard error of cultivar mean	144.55	2.88	2.72					2.56	.34
	Coefficient of variation (%)	13.02	17.24	5.17					11.45	50.50
	5% LSD Cultivar means (*****=ns)	411.74	8.19	7.75					7.29	.98

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
9	Jupiter	1.00	159.50	20.20	15.25	17.88	3.00		41.0	20.1
7	ICA Tunia	1.00	171.50	31.95	10.00	19.28	2.25		36.6	23.1
3	SJ-2	1.00	184.00	30.30	11.75	15.88	2.00		42.2	18.6
43	Alamo	1.00	182.50	27.15	13.25	16.60	2.00		42.0	18.7
210	SJ-239	1.00	141.00	45.90	10.25	12.13	1.50			
2	UFV-1	1.00	160.75	29.20	8.75	17.58	2.00		41.0	19.6
19	Davis	1.00	186.50	25.05	8.75	21.53	2.00		40.6	20.9
8	ICA Caribe	1.00	175.00	28.95	8.50	14.70	2.00		43.4	17.0
37	G 2120	1.00	180.50	88.42	16.50	7.50	3.75		41.7	15.1
45	ICA L-109	1.00	95.50	48.75	15.75	12.53	2.00		43.0	16.3
16	Cobb	1.00	192.25	20.25	8.50	19.13	2.00		39.5	20.4
63	Hutton	1.00	178.00	13.90	5.75	21.55	2.00		42.1	20.3
44	Foster	1.00	185.00	14.80	6.00	15.90	2.25		39.9	21.7
15	Ransom	1.00	194.25	16.30	6.25	17.80	2.00		38.6	24.3
13	Bossier	1.00	175.75	13.60	5.50	18.98	2.00		41.7	20.8
14	Williams	1.00	184.50	13.65	6.50	19.18	2.25		40.5	19.9
	Grand mean	1.00	171.66	29.27	9.83	16.76	2.19			
	Standard error of cultivar mean		6.98	3.22	1.42	.39	.17			
	Coefficient of variation (%)		8.13	22.02	28.91	4.60	15.98			
	5% LSD Cultivar means (*****=ns)		19.89	9.18	4.05	1.10	.50			

Table 27. Experiment 109, 1981

Country: CAMEROON
Region: AFRICA
Latitude: 5° 27′ N
Longitude: 10° 5′ E
Zone: 3
Elevation: 1450 m

Site: DSCHANG
Cooperator(s): PATRICK SALEZ

Date planted: March 17, 1981
Date harvested: July 1981
Soil type: sand 39%, silt 32%, clay 29%, pH 5.7
Substitute cultivars: SJ-239, SJ-244

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
40	IGH 24	3675.73	63.00 (1)	141.00	2.25	1.00	100.00	90.00	80.25	1.62
2	UFV-1	3269.40	43.75	113.75	2.00	1.00	70.00	60.00	31.75	1.00
7	ICA Tunia	3144.38	45.00 (2)	117.75	1.75	1.25	100.00	95.00	63.25	1.37
39	IGH 23	3106.87	63.00 (1)	138.75	1.00	1.00	95.00	75.00	77.00	1.12
210	SJ-239	3102.70	49.00	115.75	1.50	1.25	100.00	95.00	65.00	1.00
43	Alamo	2869.32	58.00 (1)	120.00	2.00	1.00	100.00	100.00	59.50	1.25
3	SJ-2	2833.90	49.00 (3)	116.00	1.75	1.00	90.00	85.00	74.00	2.75
211	SJ-244	2644.28	52.00 (3)	127.00	1.25	1.00	100.00	90.00	65.75	1.00
46	Ecuador 2	2542.17	49.00 (3)	111.50	2.75	1.00	90.00	100.00	55.00	1.37
37	G 2120	2531.76	76.00 (1)	135.75	2.00	1.00	90.00	55.00	93.75	4.75
41	UFV-1 (BP-2)	2527.59	45.00 (2)	112.50	1.00	1.00	100.00	95.00	71.50	1.12
10	Improved Pelican	2417.15	46.50 (2)	106.75	2.50	1.00	90.00	60.00	66.75	1.12
8	ICA Caribe	2298.38	47.33 (3)	115.25	2.50	1.00	95.00	100.00	58.25	1.75
9	Jupiter	2154.60	56.00 (2)	137.25	1.25	1.00	85.00	80.00	78.25	1.25
19	Davis	1689.92	41.00 (3)	109.00	2.25	1.00	95.00	85.00	25.00	1.00
13	Bossier	1616.99	33.00 (2)	94.00	1.50	1.25	100.00	90.00	22.50	1.00
44	Foster	1410.70	33.00 (2)	94.00	1.00	1.75	100.00	55.00	25.00	1.00
58	Williams 79	1146.06	34.00 (1)	94.00	1.00	2.00	100.00	10.00	26.25	1.00
	Grand mean	2499.00	47.42	116.67	1.74	1.14	94.44	78.89	57.71	1.47
	Standard error of cultivar mean	252.21	9.00	1.01	.40	.12	5.66	11.93	2.44	.11
	Coefficient of variation (%)	20.18	18.97	1.73	46.17	21.10	11.98	30.24	8.47	15.33
	5% LSD Cultivar means (*****=ns)	716.07	*****	2.86	1.14	.34	16.07	33.86	6.94	.32

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
40	IGH 24		152.00	35.85	11.00	19.60	1.75	98.25	42.5	17.3
2	UFV-1		199.50	21.05	6.75	16.97	1.45	99.00	44.0	18.7
7	ICA Tunia		185.00	29.85	7.25	19.40	1.52	98.00	40.2	21.8
39	IGH 23		142.25	33.85	12.00	18.87	2.20	95.00	46.4	16.4
210	SJ-239		129.75	44.05	8.37	12.45	1.92	97.50		
43	Alamo		177.25	31.35	8.00	17.40	1.25	96.50	43.8	19.3
3	SJ-2		187.50	33.90	10.50	14.95	1.10	98.50	44.1	17.7
211	SJ-244		108.25	49.45	7.50	15.00	1.80	99.00		
46	Ecuador 2		167.75	29.45	10.00	17.35	1.40	76.50	43.4	20.2
37	G 2120		184.25	70.60	7.87	8.30	2.82	98.00	44.7	15.8
41	UFV-1 (BP-2)		185.25	28.10	8.12	14.75	1.37	98.50	41.3	20.2
10	Improved Pelican		186.75	33.30	10.62	15.50	1.15	76.50	44.5	18.8
8	ICA Caribe		133.50	37.15	6.37	14.35	1.92	93.50	46.2	16.5
9	Jupiter		147.00	37.70	10.50	20.92	1.85	96.00	42.5	19.0
19	Davis		88.75	34.80	4.50	19.62	1.47	98.75	43.1	20.1
13	Bossier		164.50	21.75	6.37	18.60	2.22	98.75	45.5	18.4
44	Foster		185.00	20.40	7.12	16.92	1.87	98.00	42.6	20.4
58	Williams 79		166.00	18.10	7.62	16.85	1.87	97.25	44.0	19.7
	Grand mean		160.57	33.93	8.36	16.55	1.72	95.19		
	Standard error of cultivar mean		13.50	3.99	.69	.44	.15	7.21		
	Coefficient of variation (%)		16.81	23.51	16.43	5.37	17.51	15.15		
	5% LSD Cultivar means (*****=ns)	*****	38.33	11.32	1.95	1.26	.43	*****		

Table 28. Experiment 924, 1980

Country: CHILE
Region: SOUTH AMERICA
Latitude: 33° 34′ S
Longitude: 70° 38′ W
Zone: 11
Elevation: 625 m

Site: ESTACION EXPERIMENTAL DE PLATINA
Cooperator(s): VITAL A. VALDIVIA

Date planted: November 4, 1980
Date harvested: February 1981
Soil type: pH 8.0, OM 2.4%, N 81, P 31.5, K 464
Fertilizer used (kg/ha): P 24.4
Amount of moisture: 20.2 mm
Number of irrigations: 9
Substitute cultivars: Wells and Amsoy 71

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
9924	Wells	3715.33	42.50	128.75					120.00	3.50
36	Evans	3686.15	40.00	110.25					113.75	4.00
57	Corsoy 79	3531.96	42.00	124.75					125.00	3.25
68	Amsoy 71	3319.41	43.00	126.00					121.25	3.50
56	Coles	3254.82	41.00	123.75					126.25	3.25
61	Cumberland	3150.63	47.00	136.25					146.25	4.00
59	Will	3023.52	49.00	134.50					111.25	4.25
38	McCall	2696.37	31.00	108.75					87.50	2.50
55	Harlon	2642.19	39.75	114.75					110.00	3.25
14	Williams	2627.61	47.00	133.25					126.25	3.75
54	Chippewa 64	2583.85	40.00	120.00					110.00	3.25
58	Williams 79	2515.09	46.00	138.00					142.50	4.00
60	Kent	1781.61	57.75	150.00					121.25	2.75
50	DeSoto	1727.43	50.75	142.50					132.50	3.75
	Grand mean	2875.43	44.05	127.96					120.98	3.50
	Standard error of cultivar mean	236.07	1.71	3.00					8.19	.59
	Coefficient of variation (%)	16.42	7.75	4.68					13.54	33.71
	5% LSD Cultivar means (*****=ns)	675.30	4.88	8.57					23.44	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
9924	Wells	1.00	297.50	28.98	16.23	16.08	2.75		39.0	22.1
36	Evans	1.00	280.00	34.13	13.10	14.70	2.25		38.7	20.2
57	Corsoy 79	1.00	277.50	33.03	13.15	14.90	1.50		37.9	18.8
68	Amsoy 71	1.00	305.00	24.13	14.85	17.33	2.00		36.3	21.6
56	Coles	1.00	260.00	22.88	13.68	18.65	2.25		39.1	18.2
61	Cumberland	1.00	285.00	26.58	16.28	16.98	2.50		39.7	17.3
59	Will	1.00	267.50	24.40	20.90	14.83	2.50		39.5	21.6
38	McCall	1.00	265.00	23.33	7.60	15.78	2.75		38.5	17.3
55	Harlon	1.50	275.00	20.63	12.18	17.30	3.50		37.7	21.2
14	Williams	1.00	282.50	21.18	22.33	14.78	2.50		40.1	20.7
54	Chippewa 64	1.00	337.50	23.18	13.00	15.03	3.25		38.0	19.1
58	Williams 79	1.00	282.75	23.88	23.48	15.33	2.75		40.3	16.1
60	Kent	1.25	233.75	21.35	20.08	15.08	2.00		41.9	18.6
50	DeSoto	1.00	302.50	25.35	21.93	12.63	2.50		39.8	17.7
	Grand mean	1.05	282.25	25.21	16.34	15.67	2.50			
	Standard error of cultivar mean	.15	18.43	2.53	1.51	.56	.39			
	Coefficient of variation (%)	28.65	13.06	20.10	18.44	7.11	31.43			
	5% LSD Cultivar means (*****=ns)	*****	*****	7.25	4.31	1.59	*****			

Table 29. Experiment 927, 1980

Country: CHILE
Region: SOUTH AMERICA
Latitude: 33° 40′ S
Longitude: 70° 36′ W
Zone: 11
Elevation: 656 m

Site: ESTACION EXPERIMENTAL UNIVERSIDAD CATOLICA, CHILE
Cooperator(s): WALDO CERUN DIAZ

Date planted: November 12, 1980
Date harvested: March 1981
Soil type: pH 7.8
Fertilizer used (kg/ha): N 30, P 41.8
Amount of moisture: 189.3 mm
Number of irrigations: 7 (175 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
59	Will	3394.77	66.00	137.50					106.50	3.00
61	Cumberland	3137.52	66.00	136.25					105.75	3.00
57	Corsoy 79	2750.60	57.00	120.50					108.00	2.50
58	Williams 79	2644.89	66.00	134.75					105.75	2.25
36	Evans	2531.89	39.00	107.00					80.25	1.00
21	Calland	2518.35	63.00	142.00					119.25	3.50
38	McCall	2384.51	39.00	101.00					71.25	1.00
55	Harlon	2365.77	47.00	109.75					92.50	2.25
54	Chippewa 64	2320.98	53.00	113.75					93.75	1.25
56	Coles	2316.30	57.00	116.00					107.50	1.25
14	Williams	2311.61	66.00	138.00					109.50	2.75
60	Kent	2198.09	71.00	146.50					115.75	2.25
32	Columbus	1310.21	77.00	153.00					114.50	3.50
	Grand mean	2475.81	59.00	127.38					102.33	2.27
	Standard error of cultivar mean	190.11		2.10					3.62	.35
	Coefficient of variation (%)	15.36		3.30					7.07	31.19
	5% LSD Cultivar means (*****=ns)	545.29		6.04					10.38	1.02

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
59	Will	1.00	174.00	30.05	19.75	16.05	2.50	88.75	37.6	22.3
61	Cumberland	1.00	174.25	23.85	19.80	16.30	3.00	90.75	38.6	22.2
57	Corsoy 79	1.25	214.25	22.20	13.85	14.13	2.25	78.75	35.6	22.4
58	Williams 79	1.00	219.50	21.90	23.95	15.88	2.00	92.00	37.8	21.2
36	Evans	1.00	221.75	24.35	8.30	13.60	2.75	83.25	35.0	22.5
21	Calland	1.00	165.50	24.85	18.60	16.25	3.25	88.00	37.7	22.3
38	McCall	1.50	225.25	22.45	6.85	14.40	2.75	79.25	36.8	21.9
55	Harlon	1.75	214.25	21.20	12.40	15.63	3.25	88.00	35.9	22.6
54	Chippewa 64	1.00	257.75	18.40	8.45	13.65	3.75	87.25	37.3	20.8
56	Coles	1.00	188.00	18.55	13.05	17.35	2.25	85.25	37.3	22.1
14	Williams	1.00	212.50	22.50	25.90	15.63	2.25	94.50	38.1	22.1
60	Kent	1.00	183.75	22.40	23.40	15.88	3.25	83.25	38.6	20.8
32	Columbus	1.00	200.75	22.35	36.20	11.98	3.25	86.25		
	Grand mean	1.12	203.96	22.70	17.73	15.13	2.81	86.56		
	Standard error of cultivar mean	.17	10.94	2.88	1.80	.56	.26	2.45		
	Coefficient of variation (%)	30.87	10.73	25.37	20.25	7.45	18.59	5.66		
	5% LSD Cultivar means (*****=ns)	*****	31.37	*****	5.15	1.62	.75	7.03		

Table 30. Experiment 346, 1981

Country: CHILE
Region: SOUTH AMERICA
Latitude: 33° 40′ S
Longitude: 70° 36′ W
Zone: 11
Elevation: 654 m

Site: PIRQUE, R. M.
Cooperator(s): P. C. PARODI, I. M. NEBREDA

Date planted: November 6, 1981
Date harvested: February 1982
Soil type: pH 6.5, OM 2.3
Fertilizer used (kg/ha): N 50.0, P 42.2
Amount of moisture: 48 mm
Substitute cultivar: Amsoy 71

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
51	Celest		120.00		1.00	1.00	92.00	54.50		5.00
38	McCall	3545.25	46.50	111.25	1.00	1.00	95.75	76.00	80.50	1.00
70	Hardin	3540.50	54.00	131.00	1.00	1.00	91.00	69.25	119.00	1.00
68	Amsoy 71	3516.00	54.00	132.75	1.00	1.00	92.00	72.25	117.00	1.00
73	Century	3486.75	57.00	134.00	1.00	1.00	92.00	53.25	110.00	1.00
61	Cumberland	3458.00	67.00	159.00	1.00	1.00	94.00	61.50	119.50	1.75
57	Corsoy 79	3432.75	68.00	130.50	1.00	1.00	89.75	59.50	115.50	1.75
72	Amcor	3429.00	61.00	135.00	1.00	1.00	92.25	68.25	127.50	1.25
59	Will	3395.75	61.00	138.00	1.00	1.00	92.50	69.25	105.75	1.00
36	Evans	3385.25	47.00	120.00	1.00	1.00	92.75	63.25	95.00	1.50
58	Williams 79	3379.00	62.75	145.25	1.00	1.00	92.00	71.00	131.25	1.50
74	Pella	3342.75	56.00	150.00	1.00	1.00	90.25	69.75	121.25	1.50
50	DeSoto	3086.75	67.25	145.00	1.00	1.00	91.50	65.00	120.50	1.75
35	Crawford	2901.75	79.00	159.00	1.00	1.00	94.25	61.50	133.75	1.75
60	Kent	2411.25	79.00	158.50	1.00	1.00	94.75	72.00	119.50	1.00
55	Harlon	2264.75	49.25	120.25	1.00	1.00	93.50	61.50	103.00	1.75
	Grand mean	3238.37	64.30	137.97	1.00	1.00	92.52	65.48	114.60	1.59
	Standard error of cultivar mean	116.48	.25	.38	0.00	0.00	1.83	4.85	1.49	.19
	Coefficient of variation (%)	7.19	.78	.55	0.00	0.00	3.96	14.81	2.60	24.41
	5% LSD Cultivar means (*****=ns)	332.43	.71	1.08	0.00	0.00	*****	*****	4.25	.55

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
51	Celest									
38	McCall	1.00	154.00	27.95	10.45	14.00	2.00	95.00		
70	Hardin	1.00	163.00	40.32	14.65	13.32	1.00	90.50		
68	Amsoy 71	1.00	128.50	38.87	16.67	16.97	1.75	96.75		
73	Century	1.00	163.50	34.52	16.07	17.02	2.50	96.25		
61	Cumberland	2.00	130.50	42.02	21.02	16.55	1.75	96.50		
57	Corsoy 79	1.00	161.50	44.65	16.73	14.47	1.75	87.25		
72	Amcor	1.00	130.50	33.27	20.57	15.30	2.25	90.25		
59	Will	1.00	161.00	35.20	19.35	15.97	1.00	96.00		
36	Evans	1.00	141.50	34.00	11.87	13.97	2.00	94.50		
58	Williams 79	1.00	134.50	29.25	17.65	17.00	1.00	98.50		
74	Pella	1.50	161.50	32.47	25.37	16.22	2.75	96.50		
50	DeSoto	1.00	131.00	28.87	23.55	14.00	1.00	98.50		
35	Crawford	1.00	85.00	28.87	21.62	12.47	1.00	99.00		
60	Kent	1.00	132.50	30.07	28.37	15.65	1.75	94.50		
55	Harlon	4.00	141.50	29.12	14.40	16.72	2.25	95.50		
	Grand mean	1.30	141.33	33.97	18.56	15.31	1.72	95.03		
	Standard error of cultivar mean	.07	4.20	1.53	.88	.31	.19	1.07		
	Coefficient of variation (%)	11.47	5.94	8.99	9.45	4.07	21.89	2.24		
	5% LSD Cultivar means (*****=ns)	.21	11.99	4.36	2.50	.89	.54	3.04		

Table 31. Experiment 739, 1980

Country: CHINA (TAIWAN) Latitude: 23° 7′ N Zone: 7
Region: ASIA Longitude: 120° 17′ E Elevation: 80 m

Site: AVRDC SHANHUA
Cooperator(s): S. SHANMUGASUNDARAM

Date planted: September 3, 1980 Date harvested: December 1980
Soil type: pH 7.8
Fertilizer used (kg/ha): N 25, P 25, K 25
Amount of moisture: 112.01 mm
Number of irrigations: 2

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
40	IGH 24	3026.86	43.75	103.00	4.25	3.50	25.00	88.75	92.57	3.50
41	UFV-1 (BP-2)	2909.33	31.75	98.50	4.25	3.25	37.50	97.50	101.18	3.25
9	Jupiter	2785.56	36.25	101.00	4.00	3.50	37.50	98.75	80.45	2.25
2	UFV-1	2773.05	33.75	100.75	4.25	2.50	35.00	98.75	52.48	1.25
43	Alamo	2749.72	40.75	100.00	4.00	3.50	23.75	91.25	66.70	4.00
14	Williams	2679.29	27.25	85.50	4.50	4.00	37.50	77.50	51.78	1.00
7	ICA Tunia	2677.20	36.25	98.25	4.50	3.50	53.75	98.75	77.18	1.75
37	G 2120	2613.02	49.75	96.25	4.00	3.75	51.25	100.00	118.75	3.50
8	ICA Caribe	2612.19	40.50	100.75	4.25	3.25	52.50	98.75	82.28	3.25
19	Davis	2571.35	28.50	93.50	4.00	3.75	63.75	92.50	34.68	1.25
39	IGH 23	2321.30	43.25	100.75	4.00	3.75	36.25	81.25	92.48	3.25
44	Foster	2242.95	28.00	90.25	4.00	3.75	48.75	92.50	29.93	1.25
64	ICA L-125	2115.42	42.75	100.50	4.00	3.50	37.50	95.00	107.08	3.25
63	Hutton	2084.58	27.50	89.25	4.25	3.25	21.25	86.25	31.83	1.50
3	SJ-2	2026.24	40.75	94.00	4.00	3.75	57.50	71.25	87.22	3.50
10	Improved Pelican	2016.24	34.00	91.00	4.75	4.00	57.50	78.75	95.50	3.50
	Grand mean	2512.77	36.55	96.45	4.19	3.53	42.27	90.47	75.13	2.58
	Standard error of cultivar mean	209.70	1.66	1.45	.26	.20	8.64	6.64	2.85	.30
	Coefficient of variation (%)	16.69	9.06	3.00	12.52	11.42	40.90	14.69	7.60	23.09
	5% LSD Cultivar means (*****=ns)	597.33	4.72	4.13	*****	.57	24.62	*****	8.13	.85

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
40	IGH 24	1.50	182.50	41.80		14.93	1.25	99.75		
41	UFV-1 (BP-2)	1.25	176.00	41.73		13.05	1.00	99.25		
9	Jupiter	1.25	157.75	48.35		16.63	1.00	99.25		
2	UFV-1	1.25	182.50	30.58		15.05	1.00	99.25		
43	Alamo	1.00	168.50	31.68		14.03	1.00	100.00		
14	Williams	1.50	185.75	24.58		17.63	1.25	99.75		
7	ICA Tunia	1.50	183.50	25.93		16.35	1.00	99.75		
37	G 2120	1.00	182.50	73.18		7.95	1.00	100.00		
8	ICA Caribe	1.00	168.50	50.03		12.63	1.00	99.00		
19	Davis	2.00	207.75	28.98		14.50	1.50	99.50		
39	IGH 23	1.75	173.75	38.18		14.90	1.25	99.25		
44	Foster	1.75	176.00	27.20		15.13	1.50	99.00		
64	ICA L-125	1.00	145.25	48.93		12.80	1.00	99.75		
63	Hutton	1.25	183.25	27.08		15.98	1.00	99.50		
3	SJ-2	1.75	163.00	39.78		12.78	1.00	99.25		
10	Improved Pelican	1.75	167.00	37.65		14.23	1.25	100.00		
	Grand mean	1.41	175.22	38.47		14.28	1.13	99.52		
	Standard error of cultivar mean	.24	8.94	3.54		.40	.16	.37		
	Coefficient of variation (%)	34.66	10.21	18.39		5.57	28.88	.74		
	5% LSD Cultivar means (*****=ns)	*****	25.47	10.08		1.13	*****	*****		

Table 32. Experiment 221, 1981

Country: CHINA (TAIWAN) Latitude: 23° 7′ N Zone: 7
Region: ASIA Longitude: 120° 17′ E Elevation: 9 m

Site: AVRDC,SHANHUA
Cooperator(s): S. SHANMUGASUNDARAM

Date planted: October 2, 1981 Date harvested: December 1981
Fertilizer used (kg/ha): N 60.0, P 35.0, K 67.0
Number of irrigations: 3 (36.0 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
51	Celest	1740.00	27.00	82.50	3.50	3.50	66.25	78.75	36.50	1.00 (3)
47	PK-73-94	1676.50	22.75	82.75	3.00	2.50	96.25	87.50	37.00	1.00
2	UFV-1	1654.50	25.50	84.00	4.25	3.50	92.50	88.75	40.00	1.00
10	Improved Pelican	1654.50	26.50	84.00	4.00	3.50	96.25	90.00	56.00	1.00
75	Braxton	1508.50	21.00	77.50	3.75	3.25	93.75	83.75	38.50	1.00
48	Gail	1487.50	21.50	79.75	4.00	3.25	72.50	90.00	34.25	1.00
43	Alamo	1427.00	27.00	93.00	4.00	3.50	90.00	87.50	47.50	1.67 (3)
53	Ware	1420.50	20.75	77.00	3.50	4.00	91.25	81.25	33.25	1.00
69	Essex	1373.50	20.00	81.00	3.00	3.00	91.25	83.75	30.50	1.00
58	Williams 79	1359.00	20.25	78.75	3.75	3.75	88.75	78.75	33.75	1.00
35	Crawford	1280.00	19.50	77.00	4.25	4.25	90.00	66.25	31.00	1.00
49	Centennial	1196.00	21.25	78.50	3.75	3.50	95.00	82.50	28.75	1.00 (3)
50	DeSoto	1177.00	19.75	78.50	4.00	3.50	88.75	72.50	30.50	1.00
19	Davis	979.50	23.00	84.00	3.50	3.75	93.75	81.25	28.50	1.00
44	Foster	672.00	20.00	76.50	4.00	3.75	88.75	75.00	24.50	1.00
52	Bay	617.50	20.00	79.00	3.75	3.50	92.50	71.25	24.50	1.00
	Grand mean	1326.47	22.23	80.86	3.75	3.50	89.22	81.17	34.69	1.03
	Standard error of cultivar mean	98.43	.38	.73	.20	.28	8.34	5.27	2.10	.18
	Coefficient of variation (%)	14.84	3.43	1.81	10.89	15.79	18.69	13.00	12.12	17.39
	5% LSD Cultivar means (*****=ns)	280.38	1.09	2.08	.58	.79	*****	*****	5.99	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
51	Celest		201.00	13.50	15.00	20.52	1.00	98.50	39.3	22.5
47	PK-73-94		198.00	21.75	11.75	15.42	1.00	99.00	39.5	21.7
2	UFV-1		204.50	15.50	15.25	14.60	1.00	98.00	42.7	22.7
10	Improved Pelican		195.75	21.50	14.50	13.72	1.00	99.50	44.1	20.8
75	Braxton		228.75	11.75	11.00	17.92	1.00	98.50	39.0	23.3
48	Gail		196.75	12.75	9.75	18.72	1.00	100.00	43.7	20.8
43	Alamo		250.75	14.50	17.50	13.47	1.00	86.50	41.3	22.2
53	Ware		201.50	10.50	13.50	22.70	1.00	99.00	38.9	23.0
69	Essex		224.75	11.75	11.00	15.67	1.00	99.00	41.6	22.3
58	Williams 79		212.75	9.00	10.25	18.52	1.00	99.50	40.9	22.7
35	Crawford		207.00	11.75	10.00	17.37	1.00	99.50	40.8	22.8
49	Centennial		185.50	13.00	10.75	14.75	1.00	96.50	41.4	23.0
50	DeSoto		192.25	13.25	8.25	18.85	1.00	98.00	39.7	22.2
19	Davis		116.00	17.00	7.75	15.45	1.00	98.50	40.4	22.4
44	Foster		237.00	11.25	9.25	12.00	1.00	99.00	40.1	22.5
52	Bay		184.50	10.00	6.00	16.80	1.75	94.00	39.7	23.0
	Grand mean		202.30	13.67	11.34	16.66	1.05	97.69		
	Standard error of cultivar mean		13.81	1.32	1.03	.35	.19	2.12		
	Coefficient of variation (%)		13.65	19.36	18.21	4.23	35.82	4.35		
	5% LSD Cultivar means (*****=ns)		39.34	3.77	2.94	1.00	*****	6.05		

Table 33. Experiment 735, 1980

Country: COLOMBIA
Region: SOUTH AMERICA
Latitude: 3 ° 30′ N
Longitude: 76° 32′ W
Zone: 3
Elevation: 1080 m

Site: ICA CENTRAL EXP.,PALMIRA
Cooperator(s): GILBERTO BASTIDAS RAMOS and ORLANDO AGUDELO

Date planted: October 8, 1980
Date harvested: January 1981
Soil type: clay loam, sand 8%, silt 50%, clay 42%
Amount of moisture: 238.9 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
2	UFV-1	2371.31	32.00	90.00	1.50	1.25	91.75	75.25	47.00	1.00
41	UFV-1 (BP-2)	2317.13	28.00	84.00	2.00	1.75	97.00	67.00	58.00	1.00
9	Jupiter	2192.10	31.00	94.00	2.00	1.50	91.75	78.50	66.00	2.00
7	ICA Tunia	2158.76	29.00	91.00	1.75	2.00	92.75	65.75	45.00	1.00
19	Davis	2125.42	28.00	84.00	2.00	1.75	85.50	84.25	30.00	1.00
3	SJ-2	2108.75	33.00	90.00	1.75	1.50	95.50	78.50	52.00	2.00
10	Improved Pelican	2058.74	34.00	86.00	2.00	2.00	96.75	74.00	68.00	2.00
44	Foster	1992.06	22.00	82.00	2.00	2.00	97.50	51.75	23.00	1.00
8	ICA Caribe	1942.05	30.00	90.00	2.00	2.00	90.75	73.25	55.00	2.00
64	ICA L-125	1933.72	30.00	90.00	2.00	1.75	91.75	79.75	72.00	2.00
43	Alamo	1867.04	39.00	93.00	1.75	1.25	95.25	67.00	53.00	3.00
63	Hutton	1846.20	24.00	83.00	1.75	1.75	99.00	51.00	24.00	1.00
39	IGH 23	1717.01	39.00	98.00	2.00	1.00	77.00	64.75	57.00	3.00
14	Williams	1633.66	22.00	81.50	1.75	2.00	99.00	78.50	44.00	1.00
40	IGH 24	1416.95	43.00	92.00	1.50	1.25	71.50	61.25	69.00	2.00
37	G 2120	1391.94	48.00	98.00	1.50	1.00	47.00	72.25	88.00	3.00
	Grand mean	1942.05	32.00	89.16	1.83	1.61	88.73	70.17	53.19	1.75
	Standard error of cultivar mean	122.91		.63	.19	.20	4.58	7.80		
	Coefficient of variation (%)	12.66		1.40	20.91	24.64	10.32	22.24		
	5% LSD Cultivar means (*****=ns)	350.09		1.78	*****	.56	13.04	*****		

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
2	UFV-1	1.00	173.50	32.25	7.75	16.00	2.00	93.00	43.1	20.3
41	UFV-1 (BP-2)	1.00	161.25	52.75	8.00	16.48	1.00	99.00	41.6	19.6
9	Jupiter	1.00	173.25	37.25	9.25	20.30	2.00	99.00	43.3	20.9
7	ICA Tunia	1.00	180.25	34.25	8.50	19.20	2.00	93.00	40.3	22.1
19	Davis	1.00	194.50	28.75	4.75	19.00	1.00	100.00	41.2	19.5
3	SJ-2	4.00	176.50	44.25	11.75	16.90	1.00	98.00	44.0	19.6
10	Improved Pelican	1.00	179.50	40.00	7.50	15.00	2.00	100.00	43.9	19.9
44	Foster	1.00	200.75	28.00	4.25	17.00	2.00	98.00	41.6	21.5
8	ICA Caribe	4.00	166.75	40.75	6.75	14.60	2.00	90.00	44.7	16.9
64	ICA L-125	1.00	198.50	47.00	9.00	15.00	2.00	98.00	42.7	18.7
43	Alamo	1.00	192.75	33.50	14.50	15.50	2.00	100.00	44.5	19.4
63	Hutton	1.00	174.50	26.75	6.00	22.30	2.00	93.00	43.4	21.9
39	IGH 23	1.00	203.50	28.50	13.50	19.00	2.00	100.00	46.7	16.3
14	Williams	1.00	172.75	18.50	6.25	17.50	2.00	92.00	41.2	22.0
40	IGH 24	1.00	207.50	47.75	13.25	12.30	2.00	98.00	42.0	17.7
37	G 2120	5.00	204.50	61.00	12.75	7.00	3.00	98.00	46.3	13.9
	Grand mean	1.63	185.02	37.58	8.98	16.44	1.88	96.81		
	Standard error of cultivar mean		12.99	3.98	1.17	.03				
	Coefficient of variation (%)		14.04	21.18	26.09	.38				
	5% LSD Cultivar means (*****=ns)		*****	11.34	3.34	.09				

Table 34. Experiment 736, 1980

Country: COLOMBIA
Region: SOUTH AMERICA
Latitude: 9° N
Longitude: 76° W
Zone: 1
Elevation: 13 m

Site: C.N.I.A. TURIPANA: CERETE CORDO
Cooperator(s): MIGUEL ANGEL MUNOZ PINEDA and LUIS ALBERTO ROJAS MUNOZ

Date planted: August 28, 1980
Date harvested: November 1980
Soil type: pH 7.3, OM 30%
Amount of moisture: 360 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
40	IGH 24	3667.40	34.25	105.00	3.25	1.50	40.50	76.25	89.00	2.75
43	Alamo	3094.37	33.00	99.00	3.50	2.00	40.25	73.75	67.25	3.50
9	Jupiter	3063.11	28.75	99.00	4.25	3.00	30.25	63.25	77.25	3.25
2	UFV-1	3042.27	29.25	99.00	3.25	2.50	43.25	57.50	54.75	1.00
8	ICA Caribe	2615.11	32.00	112.00	2.25	1.25	53.50	82.75	115.25	5.00
39	IGH 23	2552.59	33.75	99.00	3.00	2.25	52.00	65.50	89.00	5.00
64	ICA L-125	2500.50	32.00	112.00	3.75	1.75	27.75	65.00	112.75	5.00
14	Williams	2490.08	19.00	85.00	2.25	3.25	47.00	38.75	68.00	1.00
7	ICA Tunia	2479.66	23.00	93.75	3.25	1.25	38.50	72.00	82.50	1.75
63	Hutton	2458.82	21.00	99.00	3.25	2.00	58.50	73.75	44.00	1.00
41	UFV-1 (BP-2)	2448.41	23.00	95.50	4.00	1.75	41.00	77.50	104.25	3.00
19	Davis	2333.80	21.00	88.50	1.50	2.00	64.50	71.50	43.50	1.00
10	Improved Pelican	2250.45	29.00	92.00	3.25	2.25	62.50	70.00	95.00	2.75
44	Foster	2167.10	19.00	92.00	3.00	3.00	40.00	35.75	33.00	1.00
3	SJ-2	2135.84	29.75	92.00	4.00	1.75	31.25	86.25	83.50	4.25
37	G 2120	1854.54	38.00	92.00	3.75	2.50	70.00	73.75	115.75	5.00
	Grand mean	2572.13	27.86	97.17	3.22	2.13	46.30	67.70	79.67	2.89
	Standard error of cultivar mean	140.43	.50	.86	.47	.56	14.38	15.89	4.80	.38
	Coefficient of variation (%)	10.92	3.57	1.77	29.22	52.85	62.12	46.93	12.04	26.27
	5% LSD Cultivar means (*****=ns)	400.02	1.42	2.44	1.34	*****	*****	*****	13.66	1.08

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
40	IGH 24	2.00	128.75	50.75	16.25	18.00	1.00	33.00	43.6	14.6
43	Alamo	2.00	117.50	42.25	16.75	17.50	1.00	39.50	46.3	14.3
9	Jupiter	2.00	105.00	51.00	14.50	21.75	1.00	17.75	44.9	14.5
2	UFV-1	2.00	111.00	41.25	12.50	18.00	1.00	24.25	46.1	17.3
8	ICA Caribe	2.00	121.25	68.75	14.50	13.00	1.00	34.75	47.3	14.7
39	IGH 23	1.75	108.75	53.75	14.50	18.00	1.00	27.00	45.1	13.3
64	ICA L-125	2.00	109.50	74.50	13.50	15.00	1.00	36.00	43.3	15.3
14	Williams	1.00	121.50	39.50	10.25	19.75	1.00	34.00	44.5	16.5
7	ICA Tunia	2.00	117.50	42.00	15.75	19.00	1.00	21.75	45.3	19.0
63	Hutton	2.00	108.75	38.25	11.00	23.75	1.25	6.25	44.9	19.6
41	UFV-1 (BP-2)	2.00	114.00	52.50	18.50	16.25	1.00	18.25	45.5	17.3
19	Davis	1.50	121.25	32.50	8.75	19.25	1.00	21.00	44.5	18.5
10	Improved Pelican	1.50	111.00	49.25	15.75	14.75	1.25	22.50	45.0	21.6
44	Foster	1.75	114.00	45.75	7.75	19.25	1.75	5.75	42.9	19.9
3	SJ-2	1.75	92.00	64.75	13.75	14.75	1.25	6.50	45.5	18.5
37	G 2120	2.00	104.75	71.75	14.25	7.00	2.50	67.50	44.6	12.6
	Grand mean	1.83	112.91	51.16	13.64	17.19	1.19	25.98		
	Standard error of cultivar mean	.15	7.52	6.28	1.86	.55	.24	7.36		
	Coefficient of variation (%)	15.95	13.32	24.55	27.22	6.40	40.92	56.63		
	5% LSD Cultivar means (*****=ns)	.42	*****	17.88	5.29	1.57	.69	20.96		

Table 35. Experiment 783, 1980

Country: COLOMBIA
Region: SOUTH AMERICA
Latitude: 9° N
Longitude: 76° W
Zone: 1
Elevation: 13 m

Site: C.N.I.A., TURIPANA: CERETE CORDO
Cooperator(s): MIGUEL ANGEL MUNOZ PINEDA Y LUIS ALBERTO ROJAS MUNOZ

Date planted: September 24, 1981
Date harvested: December 1981
Amount of moisture: 339.2 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
39	IGH 23	3542.37	34.00	102.00	3.25	2.50	88.75	100.00	60.75	1.00
40	IGH 24	3438.19	34.25	112.00	3.25	3.25	88.75	93.75	55.50	1.00
64	ICA L-125	3417.35	33.25	121.00	2.50	1.75	86.25	98.75	88.50	1.50
43	Alamo	3334.00	33.25	102.00	4.00	2.50	76.25	97.50	37.00	1.00
2	UFV-1	2958.92	28.00	103.00	2.25	1.50	87.50	91.25	27.50	1.25
9	Jupiter	2938.09	28.50	101.25	2.25	1.75	72.50	82.50	43.00	1.00
81	Ecuador 1	2875.57	32.50	98.50	3.00	4.25	76.25	92.50	47.00	1.00
3	SJ-2	2708.87	31.00	98.75	3.50	1.75	96.25	87.50	67.75	1.25
41	UFV-1 (BP-2)	2417.15	28.00	98.50	2.25	2.25	96.25	96.25	64.75	1.00
37	G 2120	2417.15	13.25	94.00	3.25	1.75	87.50	86.25	78.25	3.25
19	Davis	2271.29	24.00	100.25	2.50	2.50	85.00	97.50	34.75	1.00
13	Bossier	1958.72	24.00	97.75	2.75	2.25	92.50	76.25	23.25	1.00
44	Foster	1937.89	24.00	97.75	2.50	2.75	91.25	81.25	20.25	1.25
15	Ransom	1854.54	24.00	97.75	1.50	3.25	96.25	91.25	30.00	2.00
16	Cobb	1604.49	24.00	106.00	2.50	2.75	88.75	81.25	26.00	1.00
	Grand mean	2644.97	27.73	102.03	2.75	2.45	87.33	90.25	46.95	1.30
	Standard error of cultivar mean	297.58	6.31		.47	.82	6.72	5.63	4.53	.40
	Coefficient of variation (%)	22.50	45.51		34.47	67.15	15.40	12.48	19.29	61.37
	5% LSD Cultivar means (*****=ns)	849.32	*****		*****	*****	*****	*****	12.92	1.14

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
39	IGH 23	1.00	91.25	63.00	14.75	20.00	1.75	55.25	45.8	20.3
40	IGH 24	1.00	83.00	85.00	9.00	17.25	1.00	59.25	40.9	23.2
64	ICA L-125	1.00	46.25	125.00	14.25	18.00	2.00	40.00	42.2	24.1
43	Alamo	1.00	100.25	64.00	7.50	17.75	1.00	67.50	43.7	22.2
2	UFV-1	1.00	96.75	52.25	5.50	19.00	1.75	49.00	45.9	20.3
9	Jupiter	1.25	101.50	60.25	9.50	20.00	2.25	30.75	42.9	21.8
81	Ecuador 1	1.00	52.75	91.00	8.00	20.75	2.00	26.50	42.1	23.8
3	SJ-2	1.25	104.25	72.50	15.00	14.75	2.50	30.50	43.5	21.2
41	UFV-1 (BP-2)	1.00	69.50	68.75	10.75	16.75	2.00	19.25	44.1	21.9
37	G 2120	1.75	101.75	133.00	7.50	7.25	2.75	70.75	45.2	14.3
19	Davis	1.25	90.75	41.00	7.75	20.25	2.25	15.75	43.6	21.5
13	Bossier	1.00	89.50	46.25	6.50	19.00	3.25	6.50	45.9	21.7
44	Foster	1.00	91.00	40.25	5.75	19.25	3.50	13.00		
15	Ransom	1.25	106.00	39.25	6.25	20.75	3.50	6.00		
16	Cobb	1.00	62.25	40.00	6.25	20.00	3.00	11.75	41.3	23.0
	Grand mean	1.12	85.78	68.10	8.95	18.05	2.30	33.45		
	Standard error of cultivar mean	.18	9.06	7.68	1.36	.26	.25	7.61		
	Coefficient of variation (%)	31.41	21.12	22.54	30.33	2.87	21.46	45.52		
	5% LSD Cultivar means (*****=ns)	*****	25.85	21.91	3.87	.74	.70	21.73		

Table 36. Experiment 832, 1980

Country: COLOMBIA
Region: SOUTH AMERICA
Latitude: 4° 12′ N
Longitude: 74° 56′ W
Zone: 1
Elevation: 481 m

Site: C.R.I.A. NATAIMA, ESPINAL, TOLIMA
Cooperator(s): CARLOS ARTURO VARON RODRIGUEZ, GILBERT BASTIDAS RAMOS

Date planted: April 7, 1981
Date harvested: July 1981
Soil type: sand 70%, silt 20%, clay 10%, pH 6.2
Amount of moisture: 710 mm
Number of irrigations: 1

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
43	Alamo	3260.29	35.50	99.00	3.00	1.25	90.00	53.75	24.95	1.00
19	Davis	3083.21	25.00	94.50	3.50	2.00	88.75	77.50	23.05	1.00
14	Williams	2760.31	22.00	90.75	1.00	1.25	83.75	83.75	34.80	2.50
2	UFV-1	2676.98	29.00	99.00	3.50	1.75	95.00	48.75	23.50	1.00
49	Centennial	2551.98	22.25	90.25	2.25	1.00	86.25	80.00	26.80	1.00
51	Celest	2499.90	24.00	90.50	2.75	2.25	90.00	81.25	25.65	1.00
13	Bossier	2468.65	22.00	90.50	2.00	1.00	88.75	42.50	16.90	1.00
50	DeSoto	2239.49	17.00	90.50	1.75	2.50	81.25	81.25	36.60	1.00
52	Bay	2156.16	22.00	90.25	3.00	1.25	90.00	67.50	36.13	1.00
44	Foster	2104.08	22.00	90.25	3.50	3.00	95.00	65.00	20.43	1.00
37	G 2120	2041.58	41.00	99.00	2.50	4.25	90.00	71.25	88.05	4.00
18	Forrest	2020.75	22.50	90.50	2.75	2.00	95.00	73.75	26.10	1.00
32	Columbus	1999.92	22.00	90.25	1.75	1.00	83.75	70.00	32.45	2.50
48	Gail	1854.09	22.00	90.50	3.25	1.50	91.25	72.50	20.35	1.00
47	PK-73-94	1749.93	26.00	92.50	4.00	3.50	68.75	67.50	21.25	2.50
53	Ware	1562.44	22.00	90.50	2.25	2.25	86.25	145.00	31.95	1.00
	Grand mean	2314.36	24.77	92.42	2.67	1.98	87.73	73.83	30.56	1.47
	Standard error of cultivar mean	247.54	1.33	.85	.51	.55	3.96	19.94	5.73	.66
	Coefficient of variation (%)	21.39	10.77	1.85	37.98	55.56	9.03	54.03	37.51	90.39
	5% LSD Cultivar means (*****=ns)	705.11	3.80	2.43	1.45	1.57	11.29	*****	16.32	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
43	Alamo	1.25	28.50	39.75	5.05	17.25	2.00		47.0	20.3
19	Davis	1.50	35.50	29.40	5.15	17.25	2.00		46.8	20.0
14	Williams	2.00	28.75	28.00	6.30	16.25	2.00		45.1	21.9
2	UFV-1	1.00	31.75	44.00	4.65	15.00	2.00		47.8	18.4
49	Centennial	1.25	43.00	24.00	7.15	18.25	2.00		47.3	19.8
51	Celest	1.00	31.75	37.50	7.65	20.50	2.00		45.8	20.3
13	Bossier	1.00	28.50	30.00	5.05	18.50	2.00		47.9	19.6
50	DeSoto	1.25	33.50	17.00	7.70	20.00	2.00		46.1	19.7
52	Bay	1.50	34.00	21.00	5.80	19.25	2.00		45.7	21.7
44	Foster	1.50	32.00	23.75	5.93	15.25	2.00		45.9	19.2
37	G 2120	2.00	34.25	73.75	7.45	4.50	2.00		45.6	15.1
18	Forrest	1.25	36.25	23.75	7.05	14.50	2.00		45.2	20.4
32	Columbus	1.50	21.00	38.50	6.35	17.75	2.00		46.0	19.8
48	Gail	1.75	28.50	22.25	5.60	19.50	2.00		49.2	17.5
47	PK-73-94	2.00	28.25	30.00	7.30	15.75	2.00		44.7	20.3
53	Ware	1.00	40.75	20.25	5.75	24.75	2.00		47.2	20.0
	Grand mean	1.42	32.27	31.43	6.25	17.14	2.00			
	Standard error of cultivar mean	.26	2.99	5.16	.69	.87				
	Coefficient of variation (%)	37.18	18.56	32.82	22.17	10.15				
	5% LSD Cultivar means (*****=ns)	*****	8.53	14.69	1.97	2.48				

Table 37. Experiment 749, 1980

Country: COSTA RICA
Region: MESO-AMERICA
Latitude: 10° 10′ N
Longitude: 85° 10′ W
Zone: 1
Elevation: 50 m

Site: ABANGARES: GUANACASTE
Cooperator(s): FRANCIS HSU, HECTOR MADRIGAL, JUSTIN JACKSON

Date planted: August 24, 1980
Date harvested: December 1980
Soil type: sandy loam, pH 6.2
Fertilizer used (kg/ha): N 20, P 26.0, K 17

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
14	Williams	3559.04	29.00	101.00					63.33	1.50
43	Alamo	3540.29	40.00	124.50					41.20	1.00
9	Jupiter	3202.72	34.50	119.00					48.40	1.25
7	ICA Tunia	2971.43	35.00	121.50					65.25	1.25
41	UFV-1 (BP-2)	2950.59	32.75	116.00					88.98	2.00
10	Improved Pelican	2927.67	34.75	107.00					96.48	3.00
40	IGH 24	2856.82	40.50	127.25					66.77	1.25
2	UFV-1	2750.55	38.00	128.25					36.00	1.00
8	ICA Caribe	2717.21	38.00	126.75					116.50	4.00
63	Hutton	2592.18	29.00	118.25					55.70	1.75
45	ICA L-109	2400.48	42.25	133.75					67.93	1.50
3	SJ-2	2283.79	35.00	115.50					70.70	2.50
39	IGH 23	2019.15	41.00	118.50					64.95	1.25
19	Davis	2017.07	30.00	115.75					30.38	1.00
44	Foster	2008.73	30.00	116.50					27.75	1.00
37	G 2120	1900.38	45.75	112.50					85.35	4.50
	Grand mean	2668.63	35.97	118.88					64.10	1.86
	Standard error of cultivar mean	311.35	.57	1.83					4.10	.23
	Coefficient of variation (%)	23.33	3.15	3.08					12.78	24.81
	5% LSD Cultivar means (*****=ns)	886.85	1.61	5.21					11.67	.66

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
14	Williams	1.00	163.50	41.78	9.93	21.20	1.00		43.8	22.1
43	Alamo	1.00	120.75	66.18	6.48	19.73	1.00		46.5	21.7
9	Jupiter	1.50	109.00	57.65	7.93	22.23	1.25		45.0	23.3
7	ICA Tunia	1.25	115.75	57.72	9.50	20.03	1.00		42.8	22.9
41	UFV-1 (BP-2)	1.50	136.75	61.90	11.90	17.48	1.25		44.7	21.5
10	Improved Pelican	1.25	116.00	70.98	11.23	14.58	1.75		44.5	21.9
40	IGH 24	1.00	120.50	68.40	9.45	17.95	2.25		43.4	22.4
2	UFV-1	1.50	118.00	58.48	6.63	17.70	1.00		45.3	21.1
8	ICA Caribe	1.25	119.75	116.28	9.60	15.10	1.75		49.0	17.6
63	Hutton	1.25	131.25	54.35	9.65	25.90	1.50		44.8	21.3
45	ICA L-109	1.00	139.50	96.97	10.78	14.38	2.00		46.7	17.9
3	SJ-2	2.50	124.75	79.55	10.55	13.50	1.75		44.4	20.7
39	IGH 23	1.75	124.50	53.75	12.88	20.15	1.00		48.2	19.2
19	Davis	3.00	122.50	38.83	5.65	21.48	1.50		44.1	22.3
44	Foster	1.25	96.50	40.15	5.28	18.98	2.00		44.1	21.9
37	G 2120	1.75	102.75	92.23	10.73	7.60	2.00		45.3	16.6
	Grand mean	1.48	122.61	65.95	9.26	18.00	1.50			
	Standard error of cultivar mean	.27	16.87	6.81	.83	.30	.21			
	Coefficient of variation (%)	36.49	27.51	20.66	17.97	3.29	27.89			
	5% LSD Cultivar means (*****=ns)	.77	*****	19.41	2.37	.84	.60			

Table 38. Experiment 173, 1981

Country: COSTA RICA
Region: MESO-AMERICA
Latitude: 10° 48′ N
Longitude: 85° 8′ W
Zone: 1
Elevation: 10 m

Site: E. J. N. CANAS
Cooperator(s): RODRIGO ALFARO M., ADRIAN MORALES G.

Date planted: September 21, 1981 Date harvested:
Fertilizer used (kg/ha): N 20.0, P 26.0, K 16.7

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
8	ICA Caribe	1859.74	35.25	101.25					74.00	1.00
40	IGH 24	1713.40	33.25	97.25					63.00	1.00
37	G 2120	1689.01	37.25	99.50					78.75	1.00
9	Jupiter	1591.45	33.25	94.50					55.00	1.00
10	Improved Pelican	1585.35	30.25	90.00					57.75	1.00
3	SJ-2	1466.45	32.50	95.75					63.50	1.00
43	Alamo	1432.91	33.25	95.00					43.25	1.00
2	UFV-1	1274.38	30.25	92.25					45.00	1.00
58	Williams 79	1213.40	30.50	90.25					45.75	1.00
41	UFV-1 (BP-2)	1195.11	34.25	96.50					54.25	1.00
19	Davis	1115.84	28.50	88.00					42.00	1.00
13	Bossier	1030.48	26.25	83.75					37.25	1.00
44	Foster	835.36	27.75	87.25					34.75	1.00
46	Ecuador 2	762.19	34.50	99.00					50.00	1.00
16	Cobb	725.60	32.25	96.25					46.00	1.25
15	Ransom	603.65	26.50	89.50					38.25	1.00
	Grand mean	1255.89	31.61	93.50					51.78	1.02
	Standard error of cultivar mean	223.16	2.50	3.76					4.75	.06
	Coefficient of variation (%)	35.54	15.81	8.05					18.34	12.31
	5% LSD Cultivar means (*****=ns)	635.65	*****	*****					13.52	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
8	ICA Caribe	1.25	87.75	43.50		17.92	1.50	93.75		
40	IGH 24	1.75	73.25	71.75		18.62	2.00	75.00		
37	G 2120	3.00	126.25	60.75		10.20	1.25	87.50		
9	Jupiter	1.00	70.25	43.25		18.15	2.25	71.25		
10	Improved Pelican	1.25	83.25	31.75		18.95	2.50	75.00		
3	SJ-2	1.25	93.75	39.50		19.37	2.00	69.50		
43	Alamo	1.25	92.75	38.00		20.07	2.25	67.50		
2	UFV-1	1.00	87.75	33.75		18.30	2.25	75.00		
58	Williams 79	1.00	87.00	31.75		19.62	1.50	73.75		
41	UFV-1 (BP-2)	1.50	85.75	44.25		18.35	2.50	77.50		
19	Davis	1.00	67.00	30.50		19.55	2.25	70.00		
13	Bossier	1.00	91.75	32.50		21.67	2.75	67.50		
44	Foster	1.00	91.00	26.25		20.17	2.00	80.00		
46	Ecuador 2	1.00	40.25	40.75		21.60	2.00	54.75		
16	Cobb	1.00	68.50	33.75		20.35	2.50	67.50		
15	Ransom	1.00	58.00	40.75		20.77	2.50	70.00		
	Grand mean	1.27	81.52	40.17		18.98	2.12	73.47		
	Standard error of cultivar mean	.26	12.10	7.86		1.55	.45	6.41		
	Coefficient of variation (%)	41.77	29.69	39.11		16.36	42.16	17.45		
	5% LSD Cultivar means (*****=ns)	.75	34.47	22.38		4.42	*****	18.26		

Table 39. Experiment 174, 1981

Country: COSTA RICA
Region: MESO-AMERICA
Latitude: 9° 35′ N
Longitude: 84° 30′ W
Zone: 1
Elevation: 80 m

Site: PARRITA
Cooperator(s): FRANCIS HSU

Date planted: November 25, 1981
Date harvested: February 1982
Fertilizer used (kg/ha): N 25.0, P 33.0, K 21.0
Amount of moisture: 500 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
8	ICA Caribe	4180.00	40.00	110.00					82.50	3.25
10	Improved Pelican	3600.72	38.00	92.00					85.00	2.00
41	UFV-1 (BP-2)	3409.01	38.00	101.50					81.25	1.75
3	SJ-2	3261.07	28.00	90.00					75.00	3.50
19	Davis	3233.98	28.00	92.00					37.50	1.00
9	Jupiter	3217.31	40.00	104.75					75.00	1.50
2	UFV-1	3179.80	28.00	105.00					40.00	1.00
40	IGH 24	3113.12	40.00	105.00					73.75	2.25
46	Ecuador 2	3006.85	38.00	105.00					67.00	1.50
16	Cobb	2922.67	28.00	98.00					31.25	1.00
44	Foster	2765.14	40.00	95.25					30.75	1.00
43	Alamo	2658.86	40.00	92.00					42.50	1.25
15	Ransom	2656.78	28.00	92.00					36.25	1.00
37	G 2120	2650.53	35.00	95.00					80.00	3.75
58	Williams 79	2465.08	28.00	90.00					56.25	1.00
13	Bossier	2277.54	38.00	92.00					40.00	1.00
	Grand mean	3037.40	34.69	97.47					58.37	1.73
	Standard error of cultivar mean	192.95	0.00	.95					2.39	.25
	Coefficient of variation (%)	12.71	0.00	1.94					8.19	28.77
	5% LSD Cultivar means (*****=ns)	549.61	0.00	2.70					6.81	.71

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
8	ICA Caribe	1.00	187.75	71.75	13.50	13.77	1.00 (3)		43.8	16.5
10	Improved Pelican	1.00	206.50	53.25	13.75	13.07	1.00 (3)		42.9	20.5
41	UFV-1 (BP-2)	1.00	207.75	47.00	12.75	14.97	3.67 (3)		42.8	17.6
3	SJ-2	1.00	214.00	56.25	13.25	13.80	1.33 (3)		40.1	17.9
19	Davis	1.00	209.25	33.25	6.00	18.37	1.33 (3)		39.5	17.1
9	Jupiter	1.00	201.50	53.50	15.25	17.75	2.67 (3)		37.7	17.6
2	UFV-1	1.00	212.75	38.50	9.25	15.17	2.00 (3)		43.7	15.6
40	IGH 24	1.00	210.50	59.75	13.25	13.87	3.33 (3)		38.3	20.8
46	Ecuador 2	1.00	187.00	49.75	14.50	15.20	4.00 (3)		41.6	17.1
16	Cobb	1.00	198.50	37.00	2.50	18.45	4.00 (3)		37.3	19.4
44	Foster	1.00	200.25	30.75	5.50	16.60	1.33 (3)		41.1	19.1
43	Alamo	1.00	190.50	39.00	9.50	14.55	2.00 (3)		39.5	17.1
15	Ransom	1.00	196.75	32.00	6.00	17.47	2.67 (3)		37.0	20.7
37	G 2120	1.00	224.75	87.50	12.25	7.15	1.00 (3)		44.2	13.7
58	Williams 79	1.00	194.25	28.25	9.50	17.40	1.67 (3)		38.1	17.0
13	Bossier	1.00	206.50	30.75	6.75	16.92	2.33 (3)		42.7	17.1
	Grand mean	1.00	203.03	46.77	10.22	15.28	2.21			
	Standard error of cultivar mean	0.00	11.24	3.79	.92	.39	.72			
	Coefficient of variation (%)	0.00	11.07	16.20	17.94	5.07	56.58			
	5% LSD Cultivar means (*****=ns)	0.00	*****	10.79	2.61	1.10	2.08			

Table 40. Experiment 310, 1981

Country: CZECHOSLOVAKIA
Region: EUROPE
Latitude: 48° 38′ N
Longitude: 17° 49′ E
Zone: 13
Elevation: 160 m

Site: PIESTANY
Cooperator(s): TEODOR SINSKY, LUBOMIR PASTUCHA

Date planted: May 15, 1981
Date harvested: September, 1981
Soil type: sand 30%, silt 21%, clay 49%, pH 7.15, OM 1.73%
Fertilizer used (kg/ha): N 25.0, P 25.0, K 25.0
Amount of moisture : 338 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
35	Crawford		73.00		4.25	2.00 (1)	92.50	95.00 (1)		
50	DeSoto		59.25		3.50	3.25	85.00	86.25		
60	Kent		70.50		3.00	2.25	97.50	88.75		
51	Celest		89.00		4.25		85.00			
61	Cumberland		67.50		2.50	2.50	83.75	76.25		
69	Essex		99.25		3.50		85.00			
73	Century	2670.12	58.00		4.00	1.75	93.75	87.50	79.50	1.00
74	Pella	2336.30	52.75	158.00	3.50	2.00	92.50	67.50	73.00	1.00
59	Will	2266.29	52.75		2.00	2.25	78.75	77.50	77.25	1.25
72	Amcor	2112.09	56.75		3.00	1.50	91.25	80.00	89.25	1.50
38	McCall	2018.74	35.00	122.00	2.50	3.00	92.50	91.25	42.50	1.00
36	Evans	2016.24	41.25	134.00	2.00	1.50	98.75	100.00	58.25	1.00
70	Hardin	1838.70	50.00	158.00 (1)	3.00	1.50	86.25	93.75	71.75	1.00
57	Corsoy 79	1830.78	57.00	158.00	2.50	1.75	90.00	68.75	73.50	1.50
71	Hodgson 78	1674.92	46.50	158.00	2.50	2.25	83.75	91.25	74.25	1.00
58	Williams 79	1313.18	65.50		2.50	2.00	87.50	82.50	70.50	1.75
	Grand mean	2007.73	60.87	146.57	3.03	2.11	88.98	84.15	70.97	1.20
	Standard error of cultivar mean	319.23	6.85	15.40	.44	1.05	4.40	16.01	2.62	.16
	Coefficient of variation (%)	31.80	22.50	10.51	28.81	49.68	9.90	19.03	7.37	27.31
	5% LSD Cultivar means (*****=ns)	*****	19.51	0.00	1.24	*****	*****	*****	7.59	.48

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
35	Crawford									
50	DeSoto									
60	Kent									
51	Celest									
61	Cumberland									
69	Essex									
73	Century	1.00	132.00	32.50	19.25	15.40	2.00	55.50		
74	Pella	1.00	120.50	33.75	20.25	16.97	2.00	62.75		
59	Will	1.00	116.25	38.25	15.25	16.02	3.00	53.25		
72	Amcor	1.00	99.75	51.75	18.50	14.57	4.00	66.75		
38	McCall	1.00	145.50	35.00	9.25	16.75	2.00	85.75		
36	Evans	1.00	108.25	50.50	9.75	15.70	1.00	90.50		
70	Hardin	1.00	88.50	54.25	10.75	13.02	4.00	68.25		
57	Corsoy 79	1.00	100.25	55.50	12.75	12.55	4.00	70.75		
71	Hodgson 78	1.00	75.00	54.25	14.25	16.10	2.00	85.25		
58	Williams 79	1.00	58.50	43.50	17.75	16.37	3.00	59.25		
	Grand mean	1.00	104.45	44.92	14.77	15.35	2.70	69.80		
	Standard error of cultivar mean	0.00	15.75	2.46	1.07	.56	0.00	5.04		
	Coefficient of variation (%)	0.00	30.16	10.94	14.47	7.24	0.00	14.43		
	5% LSD Cultivar means (*****=ns)	0.00	45.70	7.13	3.10	1.61	0.00	14.62		

Table 41. Experiment 728, 1980

Country: ECUADOR
Region: SOUTH AMERICA
Latitude: 2° 15′ S
Longitude: 79° 38′ W
Zone: 1
Elevation: 13.8 m

Site: BOLICHE EXPERIMENT STATION, LOS RIOS
Cooperator(s): EDUARDO MALDONADO, EDUARDO CALERO

Date planted: May 22, 1980
Date harvested: August 1980
Soil type: sand 10%, silt 10%, clay 80%, pH 6.9
Amount of moisture: 60 mm
Number of irrigations: 1 (30 mm)
Substitute cultivars: Ecuador 1 and Ecuador 2

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
40	IGH 24	3452.77	43.50	120.00	3.25	3.00	100.00	86.25	70.50	1.00
64	ICA L-125	3446.52	35.00	109.00	3.75	3.75	97.50	88.75	79.00	3.50
9	Jupiter	3269.40	34.00	109.00	3.75	3.75	100.00	87.50	70.00	1.25
41	UFV-1 (BP-2)	3267.32	31.00	106.75	3.50	3.50	96.25	88.75	68.00	2.75
46	Ecuador 2	3046.44	34.00	106.75	3.00	3.00	97.50	86.25	49.25	1.00
81	Ecuador 1	3036.02	35.50	106.00	3.00	3.25	98.75	87.50	67.00	2.25
2	UFV-1	2940.17	34.00	109.00	3.75	3.50	98.75	76.25	37.25	1.00
7	ICA Tunia	2863.07	31.00	106.00	3.00	3.00	100.00	88.75	52.00	1.00
39	IGH 23	2819.31	42.50	109.00	3.25	3.25	96.25	85.00	72.50	2.75
8	ICA Caribe	2819.31	34.00	106.00	3.25	3.25	96.25	81.25	68.75	4.00
43	Alamo	2763.05	40.00	109.00	3.25	3.25	100.00	86.25	44.50	1.50
37	G 2120	2521.34	46.00	106.00	3.50	3.50	100.00	86.25	88.00	3.75
19	Davis	2365.06	30.50	106.00	3.50	3.50	100.00	93.75	33.00	1.00
14	Williams	2169.18	25.00	85.00	3.25	3.25	95.00	78.75	38.00	1.75
44	Foster	1958.72	25.00	92.00	3.50	3.50	100.00	78.75	23.75	1.00
63	Hutton	1783.69	27.50	106.00	3.00	3.00	93.75	85.00	29.25	1.00
	Grand mean	2782.59	34.28	105.72	3.34	3.33	98.13	85.31	55.67	1.91
	Standard error of cultivar mean	161.83	.30	.27	.29	.28	1.72	2.30	3.30	.38
	Coefficient of variation (%)	11.63	1.76	.51	17.37	16.95	3.51	5.39	11.85	40.02
	5% LSD Cultivar means (*****=ns)	460.96	.86	.76	*****	*****	*****	6.55	9.40	1.09

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
40	IGH 24	1.00	167.50	16.50	16.75	22.15	3.00			
64	ICA L-125	1.00	147.00	21.25	14.75	18.60	3.00			
9	Jupiter	1.00	159.75	17.25	13.25	25.10	2.75			
41	UFV-1 (BP-2)	1.25	173.00	17.25	12.25	20.23	2.50			
46	Ecuador 2	1.00	112.50	20.75	12.75	21.25	3.00			
81	Ecuador 1	1.00	129.50	21.25	12.25	24.55	2.00			
2	UFV-1	1.25	158.75	15.25	11.00	21.45	2.75			
7	ICA Tunia	1.00	162.00	13.75	11.50	25.30	3.00			
39	IGH 23	1.00	165.75	14.75	17.50	22.90	2.75			
8	ICA Caribe	1.00	170.50	25.25	11.50	17.10	2.00			
43	Alamo	1.00	162.00	14.25	12.75	21.40	3.00			
37	G 2120	1.00	146.75	45.00	12.75	8.35	2.00			
19	Davis	1.00	172.25	11.50	9.50	21.93	2.75			
14	Williams	1.00	140.75	19.50	6.25	23.48	2.75			
44	Foster	1.00	172.00	11.00	8.50	19.40	2.50			
63	Hutton	1.00	159.75	13.50	8.50	25.10	2.25			
	Grand mean	1.03	156.23	18.63	11.98	21.14	2.63			
	Standard error of cultivar mean	.09	8.70	1.80	1.13	.47	.18			
	Coefficient of variation (%)	17.33	11.14	19.30	18.90	4.45	14.05			
	5% LSD Cultivar means (*****=ns)	*****	24.79	5.12	3.23	1.34	.53			

Table 42. Experiment 729, 1980

Country: ECUADOR
Region: SOUTH AMERICA
Latitude: 1° 5′ S
Longitude: 79° 27′ W
Zone: 1
Elevation: 73 m

Site: BOLICHE EXPERIMENTAL STATION, LOS RIOS
Cooperator(s): EDUARDO MALDONADO, PROGRAMA DE OLEAGINOSAS

Date planted: June 3, 1980
Date harvested: October 1980
Soil type: sand 90%, silt 5%, clay 5%
Substitute cultivars: Ecuador 1 and Ecuador 2

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
7	ICA Tunia	3169.38	35.00		3.50	3.25	90.00	92.50	78.25	2.25
46	Ecuador 2	2965.59	43.00		2.50	3.00	98.75	100.00	64.75	1.75
40	IGH 24	2960.59	49.00		3.00	3.00	93.75	95.00	81.00	4.75
2	UFV-1	2891.41	39.00		2.50	3.50	76.25	75.00	47.75	1.00
81	Ecuador 1	2824.73	43.00		2.00	3.00	95.00	96.25	78.25	1.75
64	ICA L-125	2733.46	44.00		2.50	3.50	87.50	97.50	110.00	4.50
43	Alamo	2691.79	49.00		3.25	3.75	100.00	87.50	59.50	5.00
19	Davis	2573.01	35.00		2.50	3.50	95.00	75.00	42.00	1.25
41	UFV-1 (BP-2)	2567.18	35.50		2.75	4.00	96.25	95.00	88.25	3.50
39	IGH 23	2458.41	49.00		2.25	3.00	97.50	97.50	89.00	3.50
8	ICA Caribe	2401.73	43.00		2.75	3.25	96.25	97.50	95.50	3.50
9	Jupiter	2272.12	41.25		2.25	3.75	90.00	86.25	64.00	2.25
37	G 2120	2248.37	56.00		3.00	4.00	100.00	97.50	110.50	5.00
14	Williams	2057.91	30.50		2.75	4.00	76.25	58.75	45.50	1.00
44	Foster	2024.15	31.25		3.00	4.00	50.00	35.00	34.25	1.00
63	Hutton	1917.05	35.00		3.75	4.00	93.75	80.00	37.50	1.00
	Grand mean	2547.31	41.16		2.77	3.53	89.77	85.39	70.38	2.69
	Standard error of cultivar mean	203.78	.22		.46	.26	6.58	6.23	6.56	.43
	Coefficient of variation (%)	16.00	1.05		33.15	14.74	14.66	14.59	18.65	32.28
	5% LSD Cultivar means (*****=ns)	580.44	.62		*****	.74	18.75	17.74	18.70	1.24

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
7	ICA Tunia	1.00	191.25	34.75	15.75	22.25	1.50			
46	Ecuador 2	1.00	181.00	36.75	19.50	19.75	2.00			
40	IGH 24	1.25	186.75	52.00	20.50	16.50	2.75			
2	UFV-1	1.25	182.00	30.75	12.75	20.75	1.50			
81	Ecuador 1	1.25	172.25	39.25	17.00	21.75	1.75			
64	ICA L-125	1.00	185.00	55.75	21.00	16.25	2.00			
43	Alamo	1.50	176.25	36.00	16.50	19.50	2.00			
19	Davis	2.25	185.00	21.00	11.25	21.50	2.00			
41	UFV-1 (BP-2)	1.25	195.00	33.00	14.50	17.50	1.25			
39	IGH 23	1.50	187.25	51.00	20.25	20.75	2.00			
8	ICA Caribe	1.50	183.50	54.25	16.50	13.75	1.00			
9	Jupiter	1.00	180.75	36.00	14.25	20.50	2.00			
37	G 2120	2.00	169.00	101.75	14.50	8.00	1.00			
14	Williams	1.25	198.00	18.25	12.75	21.75	2.00			
44	Foster	1.00	200.25	28.50	9.50	21.25	2.50			
63	Hutton	1.25	179.75	20.25	11.00	25.50	2.25			
	Grand mean	1.33	184.56	40.58	15.47	19.20	1.84			
	Standard error of cultivar mean	.20	6.41	3.96	1.24	.67	.18			
	Coefficient of variation (%)	29.60	6.95	19.53	15.98	6.98	19.49			
	5% LSD Cultivar means (*****=ns)	.56	*****	11.29	3.52	1.91	.51			

Table 43. Experiment 759, 1980

Country: ECUADOR
Region: SOUTH AMERICA
Latitude: 1° S
Longitude: 79° W
Zone: 1
Elevation: 400 m

Site: AGROLANDIA, SANTO DOMINGO
Cooperator(s): EDGAR BRACHO, YIGAL NATAV

Date planted: August 21, 1980
Date harvested: December 1980
Amount of moisture: 154 mm
Number of irrigations: 2 (18 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
2	UFV-1	4031.25	34.00	108.00	3.00	3.00	58.75		75.00	1.00
41	UFV-1 (BP-2)	3906.25	27.50	110.00	3.00	2.75	57.50		102.50	1.75
19	Davis	3718.75	30.00	102.00	3.25	3.00	71.25		62.00	1.00
7	ICA Tunia	3625.00	30.00	104.00	2.00	2.00	73.75		90.25	1.00
8	ICA Caribe	3125.00	30.00	115.00	3.25	3.50	68.75		93.75	2.00
16	Cobb	3093.75	28.00	107.50	3.25	4.00	67.50		57.50	1.00
43	Alamo	3062.50	31.00	98.00	3.50	3.25	57.50		83.50	1.25
14	Williams	3031.25	25.00	85.00	2.50	4.00	62.50		58.75	1.00
64	ICA L-125	3031.25	34.00	120.00	4.00	4.00	68.75		76.00	1.00
40	IGH 24	2875.00	50.00	114.00	3.25	2.50	72.50		91.25	2.00
10	Improved Pelican	2750.00	35.00	112.00	4.00	4.00	88.75		79.50	2.00
9	Jupiter	2718.75	32.00	120.00	4.00	4.00	61.25		104.50	2.00
39	IGH 23	2718.75	40.00	116.00	3.75	3.25	57.50		114.00	1.25
44	Foster	2531.25	27.00	84.00	4.00	3.25	58.75		51.25	1.00
3	SJ-2	2406.25	35.00	104.00	4.00	3.25	87.50		101.00	3.00
37	G 2120	2156.25	48.00	115.00	4.00	3.25	90.00		89.75	5.00
	Grand mean	3048.83	33.53	107.16	3.42	3.31	68.91		83.16	1.70
	Standard error of cultivar mean	142.70	.79	.63	.40	.42	4.72		1.08	.11
	Coefficient of variation (%)	9.36	4.72	1.17	23.34	25.11	13.69		2.60	12.99
	5% LSD Cultivar means (*****=ns)	406.46	2.26	1.78	1.14	1.18	13.44		3.08	.32

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
2	UFV-1	1.00	196.50			20.63	2.00	85.00	45.5	21.1
41	UFV-1 (BP-2)	1.00	198.25			24.80	3.00	85.00	43.5	21.3
19	Davis	1.00	193.50			20.93	3.75	85.00	41.1	22.2
7	ICA Tunia	1.00	194.50			28.10	3.00	85.00	41.8	22.7
8	ICA Caribe	1.00	197.50			20.78	2.00	85.00	45.2	19.4
16	Cobb	1.00	192.75			24.63	4.25	83.75	40.4	21.9
43	Alamo	1.00	196.25			17.73	2.00	85.00	43.2	22.6
14	Williams	1.00	197.50			25.98	2.75	90.00	42.2	23.0
64	ICA L-125	1.00	194.75			21.43	3.50	81.25	42.8	21.0
40	IGH 24	1.00	194.75			16.53	3.00	85.00	39.6	20.8
10	Improved Pelican	1.00	194.50			15.35	3.00	80.00	43.9	22.2
9	Jupiter	1.00	197.75			25.08	4.00	90.00	43.7	22.4
39	IGH 23	1.00	192.50			27.60	3.00	85.00	47.4	19.4
44	Foster	1.00	195.25			24.98	2.00	80.00	40.5	23.3
3	SJ-2	1.00	196.50			19.28	3.00	85.00	43.4	20.8
37	G 2120	1.00	195.75			15.43	5.25	90.00	47.8	15.9
	Grand mean	1.00	195.53			21.82	3.09	85.00		
	Standard error of cultivar mean		1.18			.27	.25	.44		
	Coefficient of variation (%)		1.21			2.45	15.94	1.03		
	5% LSD Cultivar means (*****=ns)		3.36			.76	.70	1.24		

Table 44. Experiment 148, 1981

Country: ECUADOR
Region: SOUTH AMERICA
Latitude: 2° 15′ S
Longitude: 79° 38′ W
Zone: 1
Elevation: 13.8 m

Site: BOLICHE EXP. ESTACION, LOS RIOS
Cooperator(s): E. MALDONADO, EDUARDO CALERO

Date planted: August 20, 1981
Date harvested: November 1981
Soil type: sand 10%, silt 10%, clay 80%, pH 6.9
Amount of moisture: 300 mm
Number of irrigations: 2 (150 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
7	ICA Tunia	3090.20	32.50	103.75					63.25	1.00
9	Jupiter	2829.73	45.00	106.75					67.00	1.00
46	Ecuador 2	2785.97	36.75	102.50					52.50	1.25
3	SJ-2	2681.79	37.50	102.00					71.75	2.00
41	UFV-1 (BP-2)	2540.09	34.00	103.50					60.00	1.00
19	Davis	2465.08	34.00	102.00					29.75	1.75
43	Alamo	2462.99	44.25	104.75					41.25	1.00
8	ICA Caribe	2354.64	34.50	104.25					64.75	1.25
39	IGH 23	2348.39	45.00	112.25					61.00	1.00
10	Improved Pelican	2304.63	35.50	98.50					66.75	1.00
40	IGH 24	2298.38	46.75	122.00					72.50	1.00
2	UFV-1	2298.38	36.00	102.50					31.25	1.25
44	Foster	1973.31	28.50	88.00					26.50	1.00
58	Williams 79	1969.14	29.00	88.00					41.25	1.25
13	Bossier	1904.55	28.00	88.00					26.00	1.25
37	G 2120	1837.87	54.00	107.25					94.50	1.25
	Grand mean	2384.07	37.58	102.25					54.37	1.20
	Standard error of cultivar mean	199.53	.53	1.30					3.15	.24
	Coefficient of variation (%)	16.74	2.82	2.54					11.59	39.09
	5% LSD Cultivar means (*****=ns)	568.36	1.51	3.70					8.98	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
7	ICA Tunia	1.00	136.00	24.25	11.00	21.32	1.75		41.1	22.8
9	Jupiter	1.00	129.00	28.75	14.00	20.00	2.25		40.8	23.9
46	Ecuador 2	1.00	128.75	24.50	12.75	19.20	2.75		41.0	23.9
3	SJ-2	1.00	130.25	31.75	10.75	15.77	1.75		42.1	19.3
41	UFV-1 (BP-2)	1.00	95.50	34.00	8.00	16.80	2.00		42.5	21.9
19	Davis	1.00	121.00	29.25	7.50	15.60	2.50		40.6	22.6
43	Alamo	1.00	127.00	30.25	10.25	17.60	1.75		43.4	21.7
8	ICA Caribe	1.00	108.75	57.50	9.50	14.42	2.25		45.0	18.9
39	IGH 23	1.00	88.75	41.00	12.25	19.35	3.00		45.1	20.5
10	Improved Pelican	1.00	133.25	21.50	9.25	14.50	1.00		43.2	22.0
40	IGH 24	1.00	102.50	61.50	14.25	17.40	2.75		38.8	23.4
2	UFV-1	1.00	122.50	25.50	6.00	17.90	1.50		43.7	19.9
44	Foster	1.00	134.25	25.50	6.25	15.70	1.75		41.6	22.0
58	Williams 79	1.00	129.25	24.50	5.75	18.82	2.00		42.1	22.1
13	Bossier	1.00	125.75	29.50	4.50	17.15	2.75		43.7	20.7
37	G 2120	1.00	106.25	52.75	12.50	8.50	2.00		46.6	15.9
	Grand mean	1.00	119.92	33.87	9.66	16.88	2.11			
	Standard error of cultivar mean	0.00	11.32	5.29	1.13	1.24	.30			
	Coefficient of variation (%)	0.00	18.89	31.23	23.43	14.69	28.88			
	5% LSD Cultivar means (*****=ns)	0.00	*****	15.07	3.22	3.53	.87			

Table 45. Experiment 193, 1981

Country: ECUADOR
Region: SOUTH AMERICA
Latitude: 1° S
Longitude: 79° W
Zone: 1
Elevation: 400 m

Site: AGROLANDIA, SANTO DOMINGO
Cooperator(s): EDGAR BRACHO, YIGAL NATAV

Date planted: April 30, 1982
Date harvested: August 1982
Fertilizer used (kg/ha): P 46.0, K 60.0
Total moisture: 156.9 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
41	UFV-1 (BP-2)	4088.31	31.50	105.00	2.75	1.00			95.75	
2	UFV-1	4073.98	32.75	110.00	2.75	1.00			45.25	
40	IGH 24	3841.71	48.75	112.00	2.00 (3)	1.50			92.75	
9	Jupiter	3718.74	30.75	110.00	3.25	1.00			70.25	
10	Improved Pelican	3560.11	34.50	98.00	2.50	1.00			95.50	
43	Alamo	3237.86	34.25	100.00	1.75	1.00			64.50	
8	ICA Caribe	3179.87	29.00	115.00	2.50	1.00			98.75	
15	Ransom	3117.89	25.75	105.00	2.75	1.00			39.00	
16	Cobb	3071.90	25.00	95.00	1.75	1.00			69.75	
58	Williams 79	2953.26	25.00	95.00	3.50	1.00			64.25	
13	Bossier	2889.61	23.75	100.00	3.00	1.00			34.00	
13	Bossier	2841.29	24.25	96.00	3.50	1.00			38.25	
44	Foster	2774.97	29.25	98.00	1.50	1.00			31.50	
19	Davis	2625.68	29.25	100.00	3.50	1.00			35.25	
37	G 2120	2360.41	42.50	110.00	3.50	1.00			111.00	
19	Davis	1989.50	30.00	102.00	1.67 (3)	1.25			29.75	
	Grand mean	3145.32	31.02	103.19	2.66	1.05			63.47	
	Standard error of cultivar mean	207.31	1.39	0.00	1.32	.14			3.44	
	Coefficient of variation (%)	13.18	8.94	0.00	49.51	26.94			10.83	
	5% LSD Cultivar means (*****=ns)	590.51	3.95	0.00	*****	*****			9.79	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
41	UFV-1 (BP-2)				12.00	24.52	2.00			
2	UFV-1				7.00	28.22	2.25			
40	IGH 24				8.00	23.40	1.50			
9	Jupiter				8.25	33.20	2.25			
10	Improved Pelican				12.00	23.37	2.00			
43	Alamo				5.00	29.30	1.25			
8	ICA Caribe				15.00	18.90	2.00			
15	Ransom				2.00	28.72	3.00			
16	Cobb				10.00	26.50	2.00			
58	Williams 79				10.00	25.77	2.00			
13	Bossier				5.00	27.80	3.25			
13	Bossier				3.75	27.00	2.25			
44	Foster				6.00	24.50	3.00			
19	Davis				5.00	27.20	2.75			
37	G 2120				10.00	12.05	3.50			
19	Davis				4.00	29.37	2.50			
	Grand mean				7.69	25.62	2.34			
	Standard error of cultivar mean				1.00	.19	.20			
	Coefficient of variation (%)				25.93	1.46	16.75			
	5% LSD Cultivar means (*****=ns)				2.84	.53	.56			

Table 46. Experiment 805, 1980

Country: EGYPT
Region: AFRICA
Latitude: 31° N
Longitude: 31° E
Zone: 10
Elevation: 30-50 m

Site: FIELD CROP RESEARCH INSTITUTE, SAKHA
Cooperator(s): AGRICULTURE RESEARCH CENTER

Date planted: April 29, 1980
Date harvested: September 1980
Fertilizer used (kg/ha): N 25.0, P26.2
Number of irrigations: 9

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
18	Forrest	2713.88	63.00	155.00					93.75	1.00
13	Bossier	2556.34	90.00	177.00					95.90	2.25
51	Celest	2490.50	66.75	148.50					80.30	1.25
52	Bay	2292.54	67.00	146.00					96.05	1.00
49	Centennial	2240.86	75.00	174.25					89.60	1.00
19	Davis	2060.83	81.00	163.00					95.00	1.00
53	Ware	2016.24	55.25	140.25					50.60	.75
47	PK-73-94	2008.73	91.25	180.50					88.05	2.00
48	Gail	1955.81	65.00	155.25					74.40	1.00
14	Williams	1789.11	35.25	127.25					71.15	.75
50	DeSoto	1707.42	48.00	129.50					70.05	1.00
	Grand mean	2166.57	67.05	154.23					82.26	1.18
	Standard error of cultivar mean	207.28	.16	.72					3.91	.15
	Coefficient of variation (%)	19.13	.46	.94					9.51	25.93
	5% LSD Cultivar means (*****=ns)	598.67	.45	2.09					11.30	.44

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
18	Forrest	1.00	113.25	56.25	28.45	14.58			37.6	21.9
13	Bossier	1.00	90.75	38.40	30.65	16.35			39.0	19.2
51	Celest	1.00	90.75	37.35	26.70	21.85			37.0	22.9
52	Bay	1.00	97.00	24.15	29.45	19.20			35.8	26.3
49	Centennial	1.00	94.25	42.63	22.98	15.73			36.1	24.8
19	Davis	1.00	93.25	44.05	31.65	14.88			39.2	19.4
53	Ware	.75	80.25	34.80	17.75	21.18			35.3	22.2
47	PK-73-94	.75	100.50	62.15	31.68	14.45			39.9	19.0
48	Gail	1.00	69.25	50.05	29.55	18.85			38.7	19.6
14	Williams	.75	102.75	28.85	11.93	20.03			37.7	23.2
50	DeSoto	1.00	99.25	28.05	12.15	18.93			37.0	24.8
	Grand mean	.93	93.75	40.61	24.81	17.82				
	Standard error of cultivar mean	.13	7.65	5.82	2.46	1.16				
	Coefficient of variation (%)	27.71	16.32	28.67	19.81	12.98				
	5% LSD Cultivar means (*****=ns)	*****	22.10	16.81	7.10	3.34				

Table 47. Experiment 806, 1980

Country: EGYPT
Region: AFRICA
Latitude: 29° N
Longitude: 31° W
Zone: 7
Elevation: 48 m

Site: SIDS
Cooperator(s): ALI ABDEL-AZIZ IBRAHIM, ABUDLLAH M. NASSIB

Date planted: May 12, 1980
Date harvested: September 1980
Fertilizer used (kg/ha): N 25, P 25
Number of irrigations: 9

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
14	Williams	3125.62	38.75	120.00					46.25	
48	Gail	3065.20	52.50	130.00					76.25	
50	DeSoto	3021.44	42.50	125.00					81.25	
18	Forrest	2979.76	46.25	140.00					76.25	
52	Bay	2938.09	51.25	142.50					97.50	
19	Davis	2208.77	60.00	148.75					113.75	
51	Celest	2208.77	51.25	145.00					86.25	
53	Ware	1792.02	51.25	141.25					97.50	
	Grand mean	2667.46	49.22	136.56					84.38	
	Standard error of cultivar mean	94.44	1.30	.80					3.48	
	Coefficient of variation (%)	7.08	5.27	1.16					8.25	
	5% LSD Cultivar means (*****=ns)	277.74	3.82	2.34					10.24	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
14	Williams		208.25	36.55		17.58			38.4	23.1
48	Gail		211.25	40.20		19.98			39.4	20.8
50	DeSoto		199.25	32.90		17.30			36.7	22.8
18	Forrest		210.00	22.90		11.80			36.4	23.1
52	Bay		216.50	36.65		19.38			36.9	23.9
19	Davis		202.75	27.35		18.50			40.1	22.1
51	Celest		206.75	27.70		18.65				
53	Ware		205.50	30.30		25.13			41.2	20.9
	Grand mean		207.53	31.82		18.54				
	Standard error of cultivar mean		4.46	2.23		.20				
	Coefficient of variation (%)		4.30	14.01		2.20				
	5% LSD Cultivar means (*****=ns)		*****	6.56		.60				

Table 48. Experiment 910, 1980

Country: EGYPT
Region: AFRICA
Latitude: 31° N
Longitude: 30° E
Zone: 10
Elevation: 30 m

Site: NUBARIA
Cooperator(s): ALI ABDEL- AZIZ ABRAHIM

Date planted:
Date harvested:
Fertilizer used: (kg/ha): N 25, P 24
Number of irrigations: 10

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
51	Celest	3139.38	65.25	126.75					73.75	1.00
14	Williams	3050.61	28.00	90.25					93.75	1.00
32	Columbus	2592.18	38.00	109.25					88.75	1.00
54	Chippewa 64	2142.09	25.00	89.25					83.00	1.00
36	Evans	2121.26	23.00	82.25					71.25	1.00
50	DeSoto	2021.24	29.75	92.50					73.75	1.00
59	Will	1929.55	27.50	90.50					77.50	1.00
58	Williams 79	1858.70	29.00	92.00					85.00	1.00
60	Kent	1800.36	38.00	109.75					67.50	1.00
61	Cumberland	1708.67	29.00	82.75					81.75	1.00
38	McCall	1692.00	24.00	84.00					78.00	1.00
57	Corsoy 79	1633.66	27.75	86.25					75.00	1.00
21	Calland	1375.27	30.00	95.75					73.75	1.00
62	York	1358.60	53.50	125.75					83.75	1.00
56	Coles	1350.27	23.25	82.00					88.75	1.00
55	Harlon	908.51	25.00	90.75					75.00	1.00
	Grand mean	1917.65	32.25	95.61					79.39	1.00
	Standard error of cultivar mean	299.38	.71	2.89					5.11	
	Coefficient of variation (%)	31.22	4.38	6.05					12.86	
	5% LSD Cultivar means (*****=ns)	852.77	2.01	8.23					14.54	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
51	Celest	1.00		17.50		17.83			37.2	22.2
14	Williams	1.00		19.75		13.63			37.6	24.0
32	Columbus	1.00		20.00		17.20			37.2	22.9
54	Chippewa 64	1.00		19.25		13.35			38.8	21.8
36	Evans	1.00		17.38		11.65			37.0	22.7
50	DeSoto	1.00		18.25		12.88			38.6	21.8
59	Will	1.00		17.00		11.60			38.2	23.6
58	Williams 79	1.00		23.25		14.43			40.6	18.9
60	Kent	1.00		18.25		14.38			38.3	21.7
61	Cumberland	1.00		9.75		14.73			38.2	21.4
38	McCall	1.00		18.00		12.15			38.1	22.6
57	Corsoy 79	1.00		17.75		11.53			40.0	20.2
21	Calland	1.00		12.63		17.80			40.0	21.1
62	York	1.00		20.75		16.25			39.1	18.9
56	Coles	1.00		17.50		14.08			37.5	22.1
55	Harlon	1.00		16.13		15.50			39.4	21.2
	Grand mean	1.00		17.70		14.31				
	Standard error of cultivar mean			2.04		1.36				
	Coefficient of variation (%)			23.02		18.97				
	5% LSD Cultivar means (*****=ns)			5.80		3.87				

Table 49. Experiment 911, 1980

Country: EGYPT
Region: AFRICA
Latitude: 30° 28′ N
Longitude: 31° 11′ W
Zone: 7
Elevation: 24 m
Site: BAHTEEM
Cooperator(s): ALI ABDEL-AZIZ IBRAHIM
Date planted: May 26, 1980
Date harvested: August 1980
Soil type: clay loam
Fertilizer used (kg/ha): N 25, P 26.2
Number of irrigations: 9

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
51	Celest	2871.41	57.50	124.25					86.50	1.00
14	Williams	2494.25	32.00	92.50					81.75	1.00
50	DeSoto	2467.16	32.00	95.75					88.25	1.00
58	Williams 79	2202.52	32.00	90.00					78.75	1.00
32	Columbus	2092.08	37.25	111.75					98.75	1.00
60	Kent	2048.33	35.25	111.50					93.25	1.00
21	Calland	2008.73	29.75	105.75					75.55	1.00
59	Will	1964.98	32.00	90.00					64.35	1.00
54	Chippewa 64	1964.98	28.00	84.00					62.35	1.00
36	Evans	1860.79	27.00	84.50					57.75	1.00
61	Cumberland	1829.53	32.00	95.75					70.75	1.00
55	Harlon	1785.77	27.75	86.50					62.30	1.00
62	York	1754.52	51.50	123.50					71.25	1.00
57	Corsoy 79	1719.09	27.00	86.50					59.10	1.00
56	Coles	1625.32	29.00	87.50					58.95	1.00
38	McCall	1002.28	26.00	84.00					50.60	1.00
	Grand mean	1980.73	33.50	97.11					72.51	1.00
	Standard error of cultivar mean	120.83	.29	.63					1.54	
	Coefficient of variation (%)	12.20	1.72	1.31					4.26	
	5% LSD Cultivar means (*****=ns)	344.18	.82	1.81					4.40	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
51	Celest	1.00	153.00	29.30	17.50	18.33	2.00		39.4	21.8
14	Williams	1.00	181.50	34.45	8.80	15.40	2.25		40.7	22.5
50	DeSoto	1.00	172.50	34.10	9.60	14.98	1.75		41.0	20.6
58	Williams 79	1.00	175.50	30.10	8.95	13.80	2.25		39.7	23.0
32	Columbus	1.00	152.25	38.50	12.45	14.75	2.50		41.7	21.8
60	Kent	1.00	183.50	39.25	10.50	15.75	3.00		39.3	20.6
21	Calland	1.00	161.25	33.90	10.15	14.20	2.75		38.4	20.7
59	Will	1.00	169.50	27.80	7.40	13.45	2.50		40.4	23.4
54	Chippewa 64	1.00	184.25	22.65	8.90	14.38	3.00		39.2	22.2
36	Evans	1.00	192.00	34.75	5.55	13.95	3.00		37.1	25.7
61	Cumberland	1.00	151.75	43.40	7.30	18.25	2.50		40.1	23.9
55	Harlon	1.00	170.25	30.85	7.85	14.68	2.25		38.9	23.9
62	York	1.00	164.50	41.55	11.15	19.08	1.75		36.5	21.6
57	Corsoy 79	1.00	167.25	40.20	5.58	12.83	2.25		38.5	22.5
56	Coles	1.00	166.00	29.35	5.70	14.40	2.75		37.3	23.6
38	McCall	1.00	129.75	31.35	5.85	11.88	2.25		37.2	23.8
	Grand mean	1.00	167.17	33.84	8.95	15.00	2.42			
	Standard error of cultivar mean		5.25	2.57	.32	.16	.26			
	Coefficient of variation (%)		6.29	15.17	7.19	2.14	21.28			
	5% LSD Cultivar means (*****=ns)		14.96	7.31	.92	.46	.73			

Table 50. Experiment 201, 1981

Country: EGYPT
Region: AFRICA
Latitude: 29° N
Longitude: 31° E
Zone: 7
Elevation: 48 m

Site: SIDS
Cooperator(s): ABDULLAH M. NASSIB, ALI ABDEL-AZIZ IBRAHIM

Date planted: March 15, 1981
Date harvested: July 1981
Fertilizer used (kg/ha): N 60.0, P 30.0

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
53	Ware	*****	35.00						86.25	3.25
47	PK-73-94		67.50						108.75	4.00
2	UFV-1		95.00						112.50	4.25
43	Alamo		95.00						107.50	4.25
75	Braxton		60.00						111.25	3.25
10	Improved Pelican		62.50						122.50	4.00
48	Gail	1810.47	43.75	135.00					77.50	1.25
51	Celest	1341.57	47.50	135.00					72.50	1.00
50	DeSoto	1289.47	35.00	100.00					68.75	1.00
69	Essex	1250.40	40.00	135.00					95.00	1.50
49	Centennial	1198.30	58.75	135.00					110.00	1.75
35	Crawford	1081.07	36.25	100.00					65.00	1.00
19	Davis	989.90	55.00	140.00					95.25	1.25
52	Bay	794.52	45.00	135.00					103.75	2.25
44	Foster	547.05	60.00	135.00					110.00	2.50
58	Williams 79	534.02	30.00	100.00					65.00	1.00
	Grand mean	1083.68	54.14	125.00					94.47	2.34
	Standard error of cultivar mean	196.39	2.53	0.00					2.56	.22
	Coefficient of variation (%)	36.24	9.33	0.00					5.42	18.48
	5% LSD Cultivar means (*****=ns)	569.87	7.20	0.00					7.29	.62

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
53	Ware							97.50		
47	PK-73-94							100.00		
2	UFV-1							98.75		
43	Alamo							97.50		
75	Braxton							100.00		
10	Improved Pelican							98.75		
48	Gail	1.00	141.25	29.60	7.00	21.95	1.00	97.50	46.1	19.3
51	Celest	1.00	131.25	30.05	6.50	23.30	1.00	95.00	42.9	19.8
50	DeSoto	1.00	138.50	26.55	5.00	21.45	1.25	100.00	44.1	20.7
69	Essex	1.00	159.00	33.65	6.75	19.32	1.00	95.00	43.5	19.9
49	Centennial	1.00	119.00	35.25	7.50	19.32	1.25	100.00	46.1	18.7
35	Crawford	1.00	124.25	34.55	3.50	17.52	1.25	98.75	44.5	21.0
19	Davis	1.00	109.50	35.55	6.00	17.40	1.75	97.50	41.6	21.4
52	Bay	1.50	133.00	25.65	7.00	19.37	1.50	100.00	38.9	23.7
44	Foster	1.00	130.00	24.95	6.50	18.02	1.75	97.50	43.7	21.1
58	Williams 79	1.00	159.25	23.40	4.25	19.02	1.00	96.25	45.8	20.1
	Grand mean	1.05	134.50	29.92	6.00	19.67	1.27	98.12		
	Standard error of cultivar mean	.09	20.67	4.21	.32	.84	.20	1.24		
	Coefficient of variation (%)	17.39	30.73	28.15	10.69	8.51	31.93	2.53		
	5% LSD Cultivar means (*****=ns)	.26	*****	*****	.93	2.43	*****	*****		

ble 51. Experiment 301, 1981

Country: EGYPT
Region: AFRICA
Latitude: 31° N
Longitude: 31° E
Zone: 10
Elevation: 7 m

Site: SAKHA
Cooperator(s): ABDULLAH M. NASSIB, ALI ABDEL-AZIZ IBRAHIM

Date planted: March 15, 1981
Date harvested: July 1981
Fertilizer used (kg/ha): N 60.0, P 30.0

Entry umber	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
51	Celest		68.00							
74	Pella	2852.47	40.00	120.00					82.32	1.00 (2)
60	Kent	2802.98	39.25	125.25					94.80 (3)	1.00 (2)
35	Crawford	2786.05	39.25	130.00					122.45	1.00 (2)
59	Will	2552.90	40.00	110.00					60.15	1.00 (2)
50	DeSoto	2545.08	40.00	122.75					91.27	1.00 (2)
58	Williams 79	2366.64	37.00	125.00					102.05	1.00 (2)
69	Essex	2344.50	62.50	152.00					91.55	1.00 (2)
73	Century	2330.17	33.50	115.00					78.95	1.00 (2)
61	Cumberland	2271.56	38.25	118.25					84.15	1.00 (2)
57	Corsoy 79	1712.35 (3)	34.00	104.75					62.70	1.00 (2)
70	Hardin	1365.02	33.00	101.00					50.70	1.00 (2)
36	Evans	1324.64	33.25	91.00					45.55	1.00 (2)
38	McCall	1204.81	33.00	87.00					45.15	1.00 (2)
71	Hodgson 78	1180.06	33.00	104.00					51.40	1.00 (2)
72	Amcor	1163.57 (3)	36.25	106.75					59.27 (3)	1.00 (1)
	Grand mean	2074.75	40.02	114.18					74.76	1.00
	Standard error of cultivar mean	713.79	.32	.29					23.72	0.00
	Coefficient of variation (%)	34.40	1.59	.50					31.73	0.00
	5% LSD Cultivar means (*****=ns)	*****	.91	.82					*****	0.00

Entry umber	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
51	Celest							16.25		
74	Pella	1.00 (2)	114.25	48.42	10.82	22.02		81.25		
60	Kent	1.00 (2)	110.25	38.85	15.85	17.07		73.75		
35	Crawford	1.00 (2)	131.75	43.25	17.72	14.82		86.25		
59	Will	1.00 (2)	145.25	36.73 (3)	9.00	19.50		86.25		
50	DeSoto	1.00 (2)	118.75	47.35	9.40	20.20		77.50		
58	Williams 79	1.00 (2)	132.75	42.75	8.80	21.62		86.25		
69	Essex	1.00 (2)	99.75	54.05	22.67	14.95		71.25		
73	Century	1.00 (2)	151.00	37.95	11.95	16.80		87.50		
61	Cumberland	1.00 (2)	130.00	33.50	9.75	19.77		82.50		
57	Corsoy 79	1.00 (2)	153.75	40.85	8.95	17.12		96.25		
70	Hardin	1.00 (2)	175.25	37.60	8.00	14.17		96.25		
36	Evans	1.00 (2)	152.25	28.85	7.25	14.35		91.25		
38	McCall	1.00 (2)	186.75	39.45	9.10	12.82		98.75		
71	Hodgson 78	1.00 (2)	101.00	44.82	7.97	14.72		71.25		
72	Amcor	1.00 (1)	78.67 (3)	44.27 (3)	9.20 (3)	18.93 (3)		63.75		
	Grand mean	1.00	133.00	41.27	11.13	17.23		79.14		
	Standard error of cultivar mean	0.00	35.42	9.34	4.88	3.49		5.46		
	Coefficient of variation (%)	0.00	26.63	22.63	43.85	20.26		13.80		
	5% LSD Cultivar means (*****=ns)	0.00	*****	*****	*****	*****		15.55		

Table 52. Experiment 302, 1981

Country: EGYPT
Region: AFRICA
Latitude: 30° N
Longitude: 30° E
Zone: 7
Elevation: 75 m

Site: GEMMEZA
Cooperator(s): ABDULLAH M. NASSIB, ALI ABDEL-AZIZ IBRAHIM

Date planted: March 15, 1981
Date harvested: July 1981
Fertilizer used (kg/ha): N 60.0, P 30.0

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Loc
35	Crawford	4867.96	43.00	123.50					87.07	3
50	DeSoto	4652.53	35.25	115.50					86.82	2
60	Kent	4418.08	41.00	124.75					92.47	3
74	Pella	4227.39	33.00	106.75					77.82	2
69	Essex	4161.49	48.50	134.50					91.65	3
61	Cumberland	3910.10	36.00	106.25					88.65	1
59	Will	3852.01	34.25	107.75					69.82	2
72	Amcor	3714.73	35.50	116.50					78.35	2
73	Century	3709.26	33.25	107.25					81.77	2
58	Williams 79	3588.39	37.75	109.00					86.82	2
51	Celest	3119.49	48.00	126.75					101.55	3
57	Corsoy 79	2898.06	33.25	85.00					82.27	1
70	Hardin	2724.05	33.75	97.00					78.82	1
36	Evans	1898.78	31.00	85.00					80.45	1
71	Hodgson 78	1759.16	33.25	109.25					80.82	2
38	McCall	1506.21	30.75	85.25					78.97	1
	Grand mean	3437.98	36.72	108.75					84.01	2
	Standard error of cultivar mean	395.23	1.57	3.90					5.07	
	Coefficient of variation (%)	22.99	8.56	7.16					12.08	26
	5% LSD Cultivar means (*****=ns)	1125.79	4.48	11.10					14.45	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Per
35	Crawford			33.25		17.50		93.75	40.0	2
50	DeSoto			27.25		18.32		93.75	38.2	2
60	Kent			28.75		17.82		95.00	40.2	2
74	Pella			29.75		18.80		95.00	37.8	2
69	Essex			38.75		14.22		91.25	40.3	2
61	Cumberland			30.50		19.45		92.50	40.3	2
59	Will			33.50		17.15		92.50	41.7	2
72	Amcor			26.00		16.57		93.75	36.9	2
73	Century			29.00		17.20		93.75	39.3	2
58	Williams 79			20.50		16.52		93.75	39.7	2
51	Celest			45.00		19.15		95.00	41.4	2
57	Corsoy 79			31.50		15.82		95.00	38.5	2
70	Hardin			25.75		17.20		95.00	38.5	2
36	Evans			31.00		17.05		92.50	39.0	2
71	Hodgson 78			27.25		18.50		92.50	40.2	2
38	McCall			32.75		14.72		93.75	38.9	2
	Grand mean			30.66		17.25		93.67		
	Standard error of cultivar mean			3.01		.56		1.24		
	Coefficient of variation (%)			19.66		6.54		2.65		
	5% LSD Cultivar means (*****=ns)			8.58		1.61		*****		

Table 53. Experiment 311, 1981

Country: EGYPT
Region: AFRICA
Site: SHALAKAN, CAIRO
Cooperator(s): E. K. ALLAM
Latitude: 30° N
Longitude: 30° E
Zone: 7
Elevation: 30 m
Date planted: April 3, 1981
Date harvested: June 1981

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
35	Crawford	4776.50	37.50	120.75	4.50	5.00	6.50	0.00	93.27	1.00
74	Pella	4294.48	34.50	112.50	4.50	4.75	7.00	6.25	65.72	1.00
60	Kent	4269.73	35.75	116.00	4.75	4.75	9.25	15.00	81.70	1.12
61	Cumberland	4187.13	35.00	100.75	4.75	4.75	6.25	18.75	45.37	1.00
72	Amcor	4118.16	33.50	92.50	4.50	5.00	8.75	36.25	79.27	1.00
69	Essex	3833.68	57.75	132.50	4.50	4.50	8.00	11.25	68.07	1.30
58	Williams 79	3524.20	35.00	106.50	4.50	4.75	6.50	28.75	67.35	1.00
51	Celest	3296.03	68.75	139.00	5.00	4.50	3.00	27.50	91.52	2.02
50	DeSoto	2870.78	35.00	115.75	4.50	4.50	7.75	16.25	70.72	1.00
59	Will	2723.21	35.25	98.00	4.50	5.00	7.50	23.75	45.57	1.00
73	Century	2101.63	33.25	95.75	5.00	5.00	3.75	0.00	46.60	1.00
57	Corsoy 79	2041.45	32.75	86.25	4.75	4.25	7.00	33.75	49.60	1.00
70	Hardin	2039.28	31.75	86.00	4.75	4.50	4.50	11.25	43.77	1.00
71	Hodgson 78	1885.21	32.00	83.00	4.75	5.00	2.50	10.00	44.90	1.15
36	Evans	1651.83	32.50	82.00	4.50	4.75	11.00	22.50	47.42	1.05
38	McCall	1267.46	31.50	81.25	4.75	4.75	4.50	16.25	33.00	1.05
	Grand mean	3055.05	37.61	103.03	4.66	4.73	6.48	17.34	60.87	1.11
	Standard error of cultivar mean	723.32	.63	2.35	.23	.21	2.94	11.28	5.99	.12
	Coefficient of variation (%)	47.35	3.33	4.57	9.96	8.88	90.54	130.13	19.69	22.40
	5% LSD Cultivar means (*****=ns)	2060.32	1.78	6.70	*****	*****	*****	*****	17.07	.35

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
35	Crawford	1.00	86.75	64.92	4.27	11.57			36.3	25.2
74	Pella	1.10	109.50	54.72	4.17	18.30			36.8	24.0
60	Kent	1.12	95.50	79.60	4.82	11.20			42.4	20.5
61	Cumberland	1.00	90.25	69.80	4.10	13.55			36.5	25.5
72	Amcor	1.05	72.00	83.67	3.25	12.72			36.1	25.2
69	Essex	1.00	97.75	84.42	5.00	11.17			45.6	19.5
58	Williams 79	1.00	78.00	78.75	3.00	14.17			39.6	22.9
51	Celest	1.05	81.50	67.62	4.87	15.67			45.2	18.4
50	DeSoto	1.07	96.75	60.80	4.15	10.18			40.1	23.4
59	Will	1.00	82.25	56.57	3.90	13.17			42.9	22.0
73	Century	1.17	89.25	45.67	4.00	12.32			39.9	23.4
57	Corsoy 79	1.02	85.50	47.67	3.52	11.32			39.2	22.9
70	Hardin	1.25	74.50	61.57	3.45	12.32			45.2	20.8
71	Hodgson 78	1.00	81.00	42.47	5.42	11.42			43.3	21.3
36	Evans	1.00	80.25	46.02	5.05	12.82			40.1	23.7
38	McCall	1.00	71.50	42.57	3.90	11.47			42.0	20.3
	Grand mean	1.05	85.77	61.68	4.18	12.71				
	Standard error of cultivar mean	.06	12.01	10.98	.73	1.19				
	Coefficient of variation (%)	11.94	28.01	35.61	34.74	18.67				
	5% LSD Cultivar means (*****=ns)	*****	*****	*****	*****	3.38				

Table 54. Experiment 814, 1980

Country: ETHIOPIA
Region: AFRICA
Latitude: 8° 55′ N
Longitude: 37° E
Zone: 3
Elevation: 1900 m
Site: DEBRE ZEIT AGRICULTURE CENTER
Cooperator(s): GIRMA G. MEDHINE, ABDURAHMAN ALI
Date planted: July 17, 1980
Date harvested: November 1980
Amount of moisture: 371.54 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodg
44	Foster	1932.81	59.00	119.00	2.00	1.25	85.00	72.50	70.33	1.5
50	DeSoto	1801.87	55.00	119.00	1.25	1.00	92.50	75.00	63.95	1.5
14	Williams	1764.69	54.00	119.00	2.00	1.25	93.75	80.00	58.18	1.7
52	Bay	1670.94	59.75	122.50	3.00	1.25	91.25	82.50	69.85	1.7
49	Centennial	1655.62	59.00	119.00	2.00	1.50	92.50	75.00	73.08	2.5
51	Celest	1639.37	59.75	119.00	2.50	1.50	93.75	72.50	60.63	1.0
19	Davis	1588.12	59.25	122.00	3.00	2.25	87.00	82.50	66.25	1.5
32	Columbus	1507.81	60.00	120.25	3.50	1.00	91.25	76.25	70.93	1.7
48	Gail	1426.87	58.75	120.25	3.00	2.25	93.75	87.50	66.90	1.0
18	Forrest	1392.19	59.00	120.25	3.50	1.00	95.00	78.75	78.08	1.2
13	Bossier	1358.44	59.50	119.00	2.50	2.00	91.25	72.50	60.03	1.5
53	Ware	1291.87	54.00	122.75	3.00	1.50	92.50	60.00	66.58	1.5
	Grand mean	1585.89	58.08	120.17	2.60	1.48	91.63	76.25	67.06	1.5
	Standard error of cultivar mean	173.26	.88	1.05	.38	.39	2.93	6.84	3.88	.3
	Coefficient of variation (%)	21.85	3.02	1.74	29.53	52.88	6.40	17.94	11.58	46.4
	5% LSD Cultivar means (*****=ns)	*****	2.53	*****	1.11	*****	*****	*****	11.17	****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Perc O
44	Foster	1.25	121.75	19.60	16.10	14.98	2.25	76.00		
50	DeSoto	1.25	137.00	23.25	9.28	16.13	2.00	80.00		
14	Williams	1.25	138.25	18.15	9.18	17.60	1.75	56.00		
52	Bay	1.75	124.50	19.35	15.03	14.80	4.00	26.00		
49	Centennial	1.25	150.25	15.50	20.88	13.08	2.00	50.00		
51	Celest	1.25	133.50	16.05	14.13	15.18	2.25	82.00		
19	Davis	1.50	125.25	17.05	15.93	12.93	2.50	54.00		
32	Columbus	1.25	114.00	24.70	11.70	13.48	2.25	62.00		
48	Gail	1.25	97.00	21.65	15.13	13.50	2.00	60.00		
18	Forrest	1.25	133.25	16.95	16.88	12.50	2.50	42.00		
13	Bossier	1.00	77.50	18.75	9.65	15.25	2.00	38.00		
53	Ware	1.75	112.75	17.00	12.88	17.38	2.25	96.00		
	Grand mean	1.33	122.08	19.00	13.89	14.73	2.31	60.17		
	Standard error of cultivar mean	.25	9.40	2.42	1.46	.58	.24			
	Coefficient of variation (%)	37.69	15.40	25.44	20.98	7.82	20.64			
	5% LSD Cultivar means (*****=ns)	*****	27.04	*****	4.19	1.66	.69			

Table 55. Experiment 816, 1980

Country: ETHIOPIA
Region: AFRICA
Latitude: 7° N
Longitude: 38° 15′ E
Zone: 3
Elevation: 1700 m

Site: AWASSA AGRICULTURAL RESEARCH CENTER
Cooperator(s): GASHAHUN WOLDIE and ABDURAHMAN ALI

Date planted: July 7, 1980
Date harvested:
Soil type: clay loam
Substitute cultivars: Coker 240 and Clark 63

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
66	Clark 63	2353.79	61.00	117.00	3.50	3.50	81.25	81.25	49.15	
44	Foster	2051.75	54.00	108.00	2.50	2.00	36.25	87.50	42.20	
51	Celest	2051.75	59.00	116.25	2.00	2.00	72.50	87.50	33.50	
52	Bay	2010.09	53.00	117.00	3.00	3.00	75.00	90.00	51.00	
14	Williams	1978.85	43.00	108.00	2.50	3.00	60.00	80.00	30.75	
13	Bossier	1900.74	53.00	108.00	2.50	2.50	45.00	78.75	38.10	
5960	Coker 240	1853.87	64.00	126.00	4.00	3.50	63.75	72.50	43.45	
50	DeSoto	1770.55	46.00	108.00	3.50	2.00	82.50	93.75	34.70	
32	Columbus	1754.93	43.00	108.00	3.50	2.75	67.50	93.75	37.45	
19	Davis	1723.68	63.25	126.00	3.50	4.00	58.75	145.00	48.35	
49	Centennial	1583.08	52.00	108.00	3.50	2.50	45.00	87.50	43.40	
48	Gail	1504.97	54.00	117.00	3.00	3.00	60.00	90.00	40.50	
2	UFV-1	968.59	73.00	143.00	4.00	4.00	68.75	57.50	72.30	
53	Ware	838.41	46.00	108.00	4.00	3.00	83.75	97.50	22.70	
43	Alamo	572.82	89.00	143.00	3.00	3.75	58.75	73.75	81.80	
	Grand mean	1661.19	56.88	117.42	3.20	2.97	63.92	87.75	44.62	
	Standard error of cultivar mean	181.52	.19	.19	.46	.48	8.76	18.54	2.09	
	Coefficient of variation (%)	21.85	.68	.33	28.72	32.16	27.40	42.25	9.36	
	5% LSD Cultivar means (*****=ns)	518.07	.55	.55	*****	1.36	24.99	*****	5.96	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
66	Clark 63		115.50	39.25	10.90				42.7	16.1
44	Foster		129.00	28.75	12.20		1.50		41.7	18.5
51	Celest		114.00	30.50	9.50				42.5	17.0
52	Bay		116.00	32.25	11.40				40.9	17.5
14	Williams		121.75	21.00	5.35				44.2	17.6
13	Bossier		104.25	24.00	8.50				43.9	17.9
5960	Coker 240		83.25	40.50	8.00				43.3	18.0
50	DeSoto		109.50	20.25	6.05				42.2	18.2
32	Columbus		106.25	26.75	6.10				44.5	18.3
19	Davis		126.75	38.00	8.70				43.4	17.8
49	Centennial		107.50	25.75	12.95				42.5	15.4
48	Gail		75.25	41.00	9.40				42.2	15.5
2	UFV-1		109.50	26.50	13.25				44.8	16.6
53	Ware		72.75	17.75	6.05				42.9	12.5
43	Alamo		134.50	24.00	19.95				44.8	15.3
	Grand mean		108.38	29.08	9.89		.10			
	Standard error of cultivar mean		11.24	3.04	1.28		.39			
	Coefficient of variation (%)		20.74	20.91	25.85		774.60			
	5% LSD Cultivar means (*****=ns)		32.09	8.68	3.65		*****			

Table 56. Experiment 212, 1981

Country: ETHIOPIA
Region: AFRICA
Latitude: 7° 46′ N
Longitude: 36° E
Zone: 3
Elevation: 1750 m

Site: JIMMA AGRICULTURAL RESEARCH STATION, MELKO
Cooperator(s): GEBREMARIAM SHEKOUR AND TESFA BOGALE

Date planted: June 19, 1981
Date harvested: December 1981
Soil type: pH 6.2, OM 2.24%, P 36.8 kg/ha, clay loam, red hill soil
Fertilizer used (kg/ha): N 25.0, P 25.0
Amount of moisture: 1495.3 M

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
35	Crawford	2863.07	46.00 (1)	146.00 (1)					61.25	1.00
52	Bay	2497.17	66.00 (1)	146.00 (1)					64.00	1.00
2	UFV-1	2446.32	77.00 (1)	157.00 (1)					64.25	1.25
19	Davis	2436.32	73.00 (1)	146.00 (1)					59.00	1.75
47	PK-73-94	2191.27	67.00 (1)	146.00 (1)					45.25	1.00
51	Celest	2187.10	63.00 (1)	146.00 (1)					47.50	1.00
48	Gail	2169.60	67.00 (1)	146.00 (1)					58.50	1.00
44	Foster	2042.07	60.00 (1)	146.00 (1)					49.75	1.00
58	Williams 79	2021.24	46.00 (1)	146.00 (1)					50.75	1.00
49	Centennial	1868.71	60.00 (1)	146.00 (1)					57.50	1.00
69	Essex	1841.20	55.00 (1)	146.00 (1)					50.25	1.00
50	DeSoto	1702.84	46.00 (1)	146.00 (1)					67.00	1.75
10	Improved Pelican	1627.83	89.00 (1)	157.00 (1)					100.00	1.50
43	Alamo	1581.98	102.00 (1)	138.00 (1)					73.75	1.25
75	Braxton	1069.38	63.00 (1)	146.00 (1)					47.25	1.00
53	Ware	642.63	50.00 (1)	146.00 (1)					32.25	1.00
	Grand mean	1949.30	64.37	146.87					58.02	1.16
	Standard error of cultivar mean	320.97	15.54	4.43					7.25	.29
	Coefficient of variation (%)	32.93	24.14	3.01					24.98	49.83
	5% LSD Cultivar means (*****=ns)	914.26	*****	*****					20.64	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
35	Crawford	1.00	199.25	25.75	11.00		1.50			
52	Bay	1.00	204.50	24.00	9.00		2.00			
2	UFV-1	1.25	198.00	27.75	11.50		2.25			
19	Davis	1.50	204.00	26.50	9.50		2.00			
47	PK-73-94	1.50	205.50	32.75	14.50		2.25			
51	Celest	1.00	204.50	23.75	11.25		2.75			
48	Gail	1.00	198.25	22.75	12.75		1.75			
44	Foster	1.00	203.25	25.50	11.00		2.25			
58	Williams 79	1.50	204.75	23.50	8.00		1.75			
49	Centennial	1.00	199.25	23.50	11.00		2.00			
69	Essex	1.00	198.25	26.25	8.25		1.25			
50	DeSoto	2.00	195.00	32.50	7.25		2.75			
10	Improved Pelican	1.75	205.00	31.00	16.00		2.50			
43	Alamo	1.25	194.50	28.50	11.75		3.00			
75	Braxton	1.25	200.25	16.50	10.00		2.25			
53	Ware	1.25	201.25	12.00	9.25		2.50			
	Grand mean	1.27	200.97	25.16	10.75		2.17			
	Standard error of cultivar mean	.24	2.71	3.81	1.64		.56			
	Coefficient of variation (%)	38.53	2.70	30.27	30.49		51.17			
	5% LSD Cultivar means (*****=ns)	*****	*****	10.85	4.67		*****			

Table 57. Experiment 110, 1981

Country: FIJI ISLANDS
Region: OCEANIA
Latitude: 17° 45′ S
Longitude: 177° 28′ E
Zone: 4
Elevation: 20 m

Site: LEGALEGA RESEARCH STATION
Cooperator(s): RICHARD VINER AND H.PRASAD

Date planted: March 31, 1981
Date harvested: June 1981
Soil type: sand 64%, silt 12%, clay 24%, sandy clay loam
Fertilizer used (kg/ha): N 25.0, P 25.0, K 25.0
Amount of moisture: 459.7 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
7	ICA Tunia	2087.92	24.00	85.75	4.25	3.50	73.75	91.25	49.52	1.00
40	IGH 24	2046.24	30.50	95.25	4.75	3.75	25.00	65.00	61.87	2.00
58	Williams 79	2044.16	21.00	77.00	3.75	3.50	97.50	92.50	47.82	1.00
2	UFV-1	2008.73	24.25	81.75	4.75	3.75	25.00	81.25	31.62	1.00
41	UFV-1 (BP-2)	1950.39	25.25	80.50	4.25	3.00	75.00	96.25	68.90	1.25
8	ICA Caribe	1942.05	25.75	81.00	3.25	3.00	97.50	91.25	57.42	1.50
3	SJ-2	1917.05	25.25	78.00	4.50	3.00	46.25	97.50	63.50	1.00
43	Alamo	1896.21	27.25	83.75	4.00	3.50	98.75	88.75	48.32	2.00
39	IGH 23	1837.87	29.25	88.75	4.50	3.50	45.00	86.25	61.70	1.75
10	Improved Pelican	1835.78	26.00	77.00	4.25	3.25	46.25	96.25	59.85	1.00
46	Ecuador 2	1706.59	29.00	87.50	4.75	3.75	25.00	93.75	46.40	1.25
37	G 2120	1692.00	24.75	81.50	4.00	3.00	96.25	98.75	87.62	3.75
9	Jupiter	1689.92	29.00	88.25	4.50	3.50	47.50	90.00	55.17	1.75
13	Bossier	1604.49	19.00	77.50	3.00	3.75	71.25	92.50	22.22	1.00
19	Davis	1496.13	21.00	81.00	4.25	4.00	75.00	88.75	22.32	1.00
44	Foster	1496.13	18.00	76.25	3.75	3.25	71.25	96.25	21.07	1.00
	Grand mean	1828.23	24.95	82.55	4.16	3.44	63.52	90.39	50.34	1.45
	Standard error of cultivar mean	139.78	.71	.76	.38	.44	21.06	9.68	2.74	.22
	Coefficient of variation (%)	15.29	5.68	1.85	18.18	25.75	66.31	21.42	10.89	29.60
	5% LSD Cultivar means (*****=ns)	398.14	2.02	2.17	*****	*****	*****	*****	7.81	.61

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
7	ICA Tunia	1.00	179.50	15.50	12.80	20.67	1.00	83.25	42.3	22.5
40	IGH 24	1.00	161.75	37.25	16.25	16.45	1.25	98.25	33.9	25.0
58	Williams 79	1.00	181.50	18.75	8.70	21.92	1.00	88.75	41.4	23.8
2	UFV-1	1.00	169.50	18.25	12.07	16.07	1.25	92.25	42.4	22.3
41	UFV-1 (BP-2)	1.00	178.50	27.50	14.70	15.70	1.00	94.50	42.4	22.7
8	ICA Caribe	1.00	167.25	26.25	16.50	14.32	1.75	65.00	44.9	19.3
3	SJ-2	1.00	189.50	23.25	15.55	14.25	1.00	89.25	41.8	20.2
43	Alamo	1.00	196.50	21.00	18.42	15.60	1.75	81.75	40.8	22.8
39	IGH 23	1.00	141.50	22.25	20.40	15.57	1.00	85.75	41.5	21.7
10	Improved Pelican	1.00	175.75	23.50	13.42	15.15	1.00	88.25	42.8	21.4
46	Ecuador 2	1.00	149.00	32.75	15.57	17.05	1.75	82.00	41.4	23.2
37	G 2120	1.00	183.50	44.50	18.20	5.80	3.00	80.50	43.9	15.3
9	Jupiter	1.00	146.25	25.25	17.92	16.80	1.50	92.00	38.5	23.9
13	Bossier	1.00	172.00	21.00	6.65	17.60	1.00	91.00	43.7	21.7
19	Davis	1.00	133.50	18.50	6.82	18.07	1.25	65.00	41.3	22.8
44	Foster	1.00	154.25	16.75	6.87	18.32	1.25	83.50	42.2	21.2
	Grand mean	1.00	167.48	24.52	13.80	16.21	1.36	85.06		
	Standard error of cultivar mean	0.00	17.47	1.81	1.05	.70	.21	7.92		
	Coefficient of variation (%)	0.00	20.86	14.73	15.25	8.64	31.17	18.63		
	5% LSD Cultivar means (*****=ns)	0.00	*****	5.14	3.00	2.00	.60	*****		

Table 58. Experiment 111, 1981

Country: FIJI ISLANDS
Region: OCEANIA
Latitude: 16° 5′ S
Longitude: 178° 40′ E
Zone: 4
Elevation: 10 m

Site: NAISELESELE, BUA
Cooperator(s): RICHARD VINER AND M. PRASAD

Date planted: April 15, 1981
Date harvested: June 1981
Soil type: sand 70%, silt 22%, clay 8%, pH 4.5, sandy loam
Fertilizer used (kg/ha): N 25.0, P 26.2, K 25.0
Amount of moisture: 634.6 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
7	ICA Tunia	413.83	29.50	74.00	3.50	3.00	85.00	76.25	25.05	1.00
40	IGH 24	402.16	38.50	81.00	4.00	4.00	58.75	85.00	34.90	1.00
58	Williams 79	391.33	23.00	65.00	3.00	3.25	86.25	80.00	21.10	1.00
2	UFV-1	363.41	31.00	71.50	4.00	3.50	76.25	71.25	22.80	1.00
43	Alamo	362.57	37.50	77.00	4.00	4.00	67.50	83.75	25.30	1.00
41	UFV-1 (BP-2)	353.82	27.50	71.25	4.00	3.00	95.00	82.50	25.80	1.00
13	Bossier	337.15	20.00	65.00	3.50	3.25	86.25	67.50	20.30	1.00
44	Foster	334.65	20.00	65.00	3.50	3.25	81.25	81.25	20.90	1.00
39	IGH 23	300.06	38.50	81.00	4.00	3.50	76.25	83.75	34.05	1.00
10	Improved Pelican	267.55	29.75	65.00	3.75	3.25	80.00	83.75	24.15	1.00
9	Jupiter	265.05	39.00	81.00	4.00	3.25	86.25	77.50	34.90	1.00
37	G 2120	258.38	39.00	81.00	3.50	3.00	76.25	78.75	32.65	1.00
3	SJ-2	251.72	32.00	74.75	3.25	3.50	63.75	71.25	27.20	1.00
19	Davis	228.80	25.75	70.25	3.75	4.00	87.50	83.75	17.60	1.00
8	ICA Caribe	219.21	33.75	74.75	3.50	3.25	80.00	80.00	22.85	1.00
46	Ecuador 2	211.29	31.50	72.75	4.00	4.00	81.25	83.75	28.20	1.00
	Grand mean	310.06	31.02	73.14	3.70	3.44	79.22	79.37	26.11	1.00
	Standard error of cultivar mean	59.62	1.35	.75	.35	.40	4.93	8.54	1.66	0.00
	Coefficient of variation (%)	38.46	8.74	2.06	19.13	23.05	12.44	21.51	12.75	0.00
	5% LSD Cultivar means (*****=ns)	*****	3.86	2.15	*****	*****	14.03	*****	4.74	0.00

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
7	ICA Tunia	1.00	177.25	9.50	7.35	14.25	2.25	68.00	44.5	20.1
40	IGH 24	1.00	184.75	10.95	12.40	11.00	2.25	76.00	44.4	17.6
58	Williams 79	1.00	179.75	6.95	6.05	13.75	1.50	75.25	44.1	21.1
2	UFV-1	1.00	209.75	7.35	10.00	10.25	2.00	50.00	44.7	19.0
43	Alamo	1.00	176.75	9.70	11.25	9.75	1.75	60.75	46.7	17.1
41	UFV-1 (BP-2)	1.00	209.75	12.35	11.25	10.25	2.00	50.25	44.3	18.8
13	Bossier	1.00	180.75	6.35	5.55	13.25	1.00	88.75	44.9	19.4
44	Foster	1.00	206.00	6.15	7.20	13.75	2.25	80.00	43.7	21.0
39	IGH 23	1.00	162.00	8.80	15.45	14.00	2.75	55.00	49.1	15.8
10	Improved Pelican	1.00	191.50	7.65	10.85	8.75	2.25	53.00	45.2	19.4
9	Jupiter	1.00	202.75	7.05	15.05	12.50	2.25	71.25	47.4	16.7
37	G 2120	1.00	195.50	12.85	12.25	7.50	2.25	84.00	50.2	12.3
3	SJ-2	1.00	183.00	9.50	12.15	10.25	2.75	72.75	46.0	17.7
19	Davis	1.00	117.75	7.60	5.30	11.75	1.75	56.00	43.5	20.0
8	ICA Caribe	1.00	191.00	7.50	10.25	9.00	1.75	31.75	48.5	16.4
46	Ecuador 2	1.00	155.50	8.25	16.40	10.75	2.00	76.25	48.2	15.7
	Grand mean	1.00	182.73	8.66	10.55	11.30	2.05	65.56		
	Standard error of cultivar mean	0.00	11.88	1.55	.88	.66	.32	1.22		
	Coefficient of variation (%)	0.00	13.00	35.87	16.65	11.67	30.97	3.71		
	5% LSD Cultivar means (*****=ns)	0.00	33.84	*****	2.50	1.88	.90	3.47		

Table 59. Experiment 112, 1981

Country: FIJI ISLANDS
Region: OCEANIA
Latitude: 17° 45′ S
Longitude: 177° 28′ E
Zone: 4
Elevation: 20 m

Site: LEGALEGA RESEARCH STATION
Cooperator(s): RICHARD VINER AND HEMANT KUMAR PRASAD

Date planted: April 25, 1981
Date harvested: July 1981
Soil type: sand 64%, silt 12%, clay 24%, pH 5.2, sand clay loam
Fertilizer used (kg/ha): N 25.0 P 25.0, K 25.0
Amount of moisture: 305.8 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
44	Foster	2028.96	24.75	79.25	4.75	4.25	25.00	70.00	32.55	1.00
9	Jupiter	1949.80	25.75	83.25	4.75	3.50	20.00	96.25	45.37	1.50
43	Alamo	1870.65	30.00	83.00	5.00	4.50	0.00	42.50	41.37	1.25
7	ICA Tunia	1849.81	28.75	86.50	4.75	4.75	25.00	22.50	46.15	1.25
13	Bossier	1828.98	24.50	77.75	5.00	4.50	0.00	48.75	33.40	1.00
19	Davis	1778.99	27.75	85.00	5.00	4.25	0.00	71.25	41.62	1.00
46	Ecuador 2	1699.83	26.25	90.00	5.00	4.75	0.00	21.25	42.15	1.00
2	UFV-1	1695.66	28.25	80.50	4.75	3.75	25.00	72.50	30.92	1.00
3	SJ-2	1645.67	29.50	79.75	4.75	4.00	22.50	83.75	34.95	1.00
39	IGH 23	1616.50	26.00	83.75	4.75	4.75	22.50	25.00	38.15	1.00
37	G 2120	1595.67	24.25	87.00	4.75	4.25	23.75	73.75	43.47	1.50
10	Improved Pelican	1545.68	23.75	74.75	4.50	4.25	50.00	68.75	34.07	1.00
58	Williams 79	1541.51	30.50	82.50	4.50	4.00	50.00	91.25	39.80	1.25
41	UFV-1 (BP-2)	1533.18	28.50	80.75	5.00	4.75	0.00	25.00	29.02	1.00
40	IGH 24	1420.69	32.75	80.50	5.00	4.50	0.00	46.25	41.57	1.25
8	ICA Caribe	1383.19	24.50	79.50	4.75	4.25	22.50	65.00	29.35	1.00
	Grand mean	1686.55	27.23	82.11	4.81	4.31	17.89	57.73	37.75	1.12
	Standard error of cultivar mean	209.14	2.48	2.78	.20	.31	19.14	22.11	7.14	.19
	Coefficient of variation (%)	24.80	18.24	6.78	8.41	14.20	213.92	76.60	37.81	34.11
	5% LSD Cultivar means (*****=ns)	*****	*****	*****	*****	*****	*****	*****	*****	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
44	Foster	1.00	213.00	11.75	10.32	18.95	1.00	99.00	41.0	22.0
9	Jupiter	1.00	219.50	16.25	14.32	12.92	1.25	88.00		
43	Alamo	1.00	189.00	15.00	14.55	13.40	1.25	87.75	38.7	21.5
7	ICA Tunia	1.00	251.50	15.75	15.07	11.40	1.75	98.00	40.0	22.5
13	Bossier	1.00	189.75	12.25	10.20	14.35	1.00	95.50	39.8	23.0
19	Davis	1.00	173.75	13.75	12.07	14.42	1.00	78.00	40.3	22.1
46	Ecuador 2	1.00	159.75	16.50	13.12	16.85	1.00	92.00	40.9	22.5
2	UFV-1	1.00	175.50	15.75	9.60	16.20	1.00	85.75	40.3	22.2
3	SJ-2	1.00	178.25	14.00	11.60	14.85	1.75	91.25	40.2	19.7
39	IGH 23	1.00	197.25	11.75	13.82	13.65	1.00	84.00		
37	G 2120	1.00	305.00	12.75	12.67	16.72	1.50	96.00	41.1	16.9
10	Improved Pelican	1.00	203.50	10.50	12.82	14.10	1.25	90.25	40.9	22.8
58	Williams 79	1.00	181.75	16.75	13.17	14.68	1.25	91.00	39.7	23.5
41	UFV-1 (BP-2)	1.00	217.50	10.75	10.17	14.52	1.00	91.75	38.6	22.5
40	IGH 24	1.00	236.00	12.75	12.10	11.32	1.50	94.50		
8	ICA Caribe	1.00	196.00	10.50	10.47	15.92	1.00	94.00		
	Grand mean	1.00	205.44	13.55	12.26	14.64	1.22	91.05		
	Standard error of cultivar mean	0.00	46.73	2.27	2.05	1.46	.24	5.90		
	Coefficient of variation (%)	0.00	45.49	33.57	33.44	19.89	39.52	12.97		
	5% LSD Cultivar means (*****=ns)	0.00	*****	*****	*****	*****	*****	*****		

Table 60. Experiment 711, 1980

Country: FRENCH GUIANA
Region: SOUTH AMERICA
Latitude: 4° 50′ N
Longitude: 52° 18′ W
Zone: 10
Elevation: 7 m

Site: CABASSOU, CAYENNE
Cooperator(s): M.R. VANBERCIE, P. GODON I.R.A.T.

Date planted: June 9, 1980
Date harvested: September 1980
Soil type: sand 49%, silt 17%, clay 34%, pH 4.7
Fertilizer used (kg/ha): N 35, P 66, K 83
Amount of moisture: 366 mm
Substitute cultivars: Hardee LS

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
9	Jupiter	2390.06	33.50	96.00	1.00	2.50	83.75	73.75	71.75	1.00
7	ICA Tunia	2342.13	32.00	98.00	1.00	1.75	91.25	83.75	52.50	1.00
2	UFV-1	2319.21	32.00	94.00	1.00	1.50	83.75	87.50	42.25	1.00
19	Davis	2298.38	30.50	81.00	1.00	1.50	83.75	76.25	35.25	1.00
16	Cobb	2056.66	25.50	82.50	1.75	2.00	81.25	82.50	33.00	1.00
14	Williams	2037.91	25.00	74.75	1.00	2.50	73.75	77.50	39.25	1.00
43	Alamo	1987.90	38.00	94.00	1.50	1.25	77.50	72.50	43.50	1.00
10	Improved Pelican	1964.98	33.50	86.50	1.25	1.25	91.25	85.00	67.25	1.00
45	ICA L-109	1958.72	44.50	98.00	1.00	2.50	82.50	71.25	62.00	1.00
15	Ransom	1819.11	24.00	81.00	1.25	1.75	73.75	83.75	33.00	1.00
4	Hardee LS	1771.19	36.75	98.00	1.25	1.00	70.00	78.75	59.00	1.00
13	Bossier	1706.59	24.50	80.00	1.00	2.50	81.25	78.75	31.00	1.00
37	G 2120	1706.59	40.25	89.00	1.25	1.50	85.00	87.50	75.75	1.00
63	Hutton	1679.50	24.00	82.25	1.50	1.75	78.75	73.75	31.00	1.00
44	Foster	1575.31	24.00	81.00	1.00	2.25	71.25	78.75	29.50	1.00
8	ICA Caribe	1525.30	39.00	126.00	1.50	1.25	93.75	86.25	72.25	1.00
	Grand mean	1946.22	31.69	90.13	1.20	1.80	81.41	79.84	48.64	1.00
	Standard error of cultivar mean	127.98	1.78	.73	.18	.35	6.55	5.45	1.71	
	Coefficient of variation (%)	13.15	11.25	1.63	29.59	39.09	16.08	13.66	7.02	
	5% LSD Cultivar means (*****=ns)	364.54	5.08	2.09	.51	1.00	*****	*****	4.86	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
9	Jupiter	1.00	239.50	38.75	14.00	18.18	1.75	93.00	41.8	24.0
7	ICA Tunia	1.00	246.75	31.00	8.63	18.65	3.50	92.50	41.9	23.2
2	UFV-1	1.00	245.25	37.00	9.20	14.60	1.25	93.00	44.3	22.5
19	Davis	1.00	221.25	24.25	7.15	16.15	2.00	87.00	41.0	22.5
16	Cobb	1.00	204.75	20.25	7.03	16.35	1.25	86.25	40.9	24.9
14	Williams	1.00	205.00	20.25	8.70	17.30	2.25	55.00	42.4	23.8
43	Alamo	1.00	238.50	30.50	10.50	14.33	1.00	94.25	41.6	24.6
10	Improved Pelican	1.00	176.25	38.25	11.80	14.93	1.00	96.00	42.8	24.9
45	ICA L-109	1.00	219.50	52.50	10.70	13.15	3.50	95.50	42.8	20.4
15	Ransom	1.00	202.25	26.25	7.28	15.20	1.75	79.75	38.3	24.7
4	Hardee LS	1.00	242.50	49.25	9.68	13.73	1.00	95.75	38.7	25.8
13	Bossier	1.00	232.50	24.75	7.25	15.35	2.25	78.75	41.3	22.1
37	G 2120	1.00	224.75	55.75	12.48	7.35	1.25	97.00	44.7	16.9
63	Hutton	1.00	224.25	19.00	7.30	17.23	2.75	76.50	41.4	22.5
44	Foster	1.00	233.00	23.25	6.83	13.63	2.50	87.00	40.3	23.0
8	ICA Caribe	1.00	176.25	39.00	12.58	13.20	3.50	70.25	46.0	17.0
	Grand mean	1.00	220.77	33.13	9.44	14.96	2.03	86.09		
	Standard error of cultivar mean		14.25	4.72	.62	.49	.25	2.84		
	Coefficient of variation (%)		12.91	28.52	13.21	6.51	24.13	6.59		
	5% LSD Cultivar means (*****=ns)		40.60	13.46	1.78	1.39	.70	8.08		

Table 61. Experiment 706, 1980

Country: GABON
Region: AFRICA
Latitude: 0° 20′ S
Longitude: 9° 45′ E
Zone: 1
Elevation: 18 m

Site: NTOUM
Cooperator(s): VAN AMERONGEN, G. VAN DE PLAS

Date planted: March 21, 1980
Date harvested: June 1980
Soil type: sand 22%, silt 65.5%, clay 14.5%, pH 6.4
Fertilizer used (kg/ha): N 25.0, P 25.0, K 25.0
Amount of moisture: 666.0 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
45	ICA L-109	2954.76	42.75	104.00	4.00				74.00	
16	Cobb	2923.50	33.00	96.00	3.75				65.00	
10	Improved Pelican	2719.29	33.75	95.75	4.25				74.75	
7	ICA Tunia	2515.09	32.25	102.25	3.75				68.50	
9	Jupiter	2308.79	34.25	100.50	4.25				72.75	
19	Davis	2294.21	27.00	91.00	3.75				56.75	
3	SJ-2	2248.37	33.00	90.00	4.00				62.75	
8	ICA Caribe	2225.44	40.75	116.75	3.75				88.50	
63	Hutton	2148.35	22.02	67.50	3.25				54.52	
2	UFV-1	2052.49	29.25	90.50	3.50				48.25	
44	Foster	2035.82	26.75	86.50	3.00				51.75	
43	Alamo	2004.57	37.75	97.75	3.75				63.25	
37	G 2120	1900.38	38.50	93.25	3.00				74.50	
14	Williams	1896.21	26.25	88.25	3.50				58.75	
15	Ransom	1810.78	27.75	90.25	3.50				52.75	
13	Bossier	1687.84	26.75	87.25	3.75				53.25	
	Grand mean	2232.87	31.99	93.59	3.67				63.75	
	Standard error of cultivar mean	298.96	2.29	6.13	.34				4.01	
	Coefficient of variation (%)	26.78	14.33	13.09	18.42				12.57	
	5% LSD Cultivar means (*****=ns)	*****	6.53	17.45	*****				11.42	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
45	ICA L-109		108.75	66.50	10.50	15.00	1.50	92.00	42.7	17.2
16	Cobb		212.00	19.25	12.25	21.83	1.00	98.00	46.0	18.4
10	Improved Pelican		169.25	31.50	13.00	20.53	1.00	93.50	43.7	19.6
7	ICA Tunia		186.75	24.75	14.40	23.00	1.00	99.00	41.5	19.8
9	Jupiter		238.75	46.75	13.00	21.85	1.00	98.00	44.0	19.3
19	Davis		200.75	22.75	8.50	19.08	1.00	97.00	41.4	21.1
3	SJ-2		214.75	28.50	13.00	14.08	1.00	96.50	43.3	18.7
8	ICA Caribe		116.00	60.75	11.90	20.00	1.50	80.00	43.3	18.7
63	Hutton		180.75	20.50	9.75	23.18	1.00	98.00		
2	UFV-1		152.00	42.50	8.75	18.90	1.00	96.00	41.2	21.5
44	Foster		208.50	19.25	9.45	19.88	1.00	97.00	42.1	19.2
43	Alamo		233.50	25.00	10.00	20.40	1.50	91.00	43.5	19.5
37	G 2120		181.00	75.50	12.00	10.55	1.00	98.50	44.1	13.9
14	Williams		189.50	15.25	13.00	22.08	1.00	99.00	43.3	20.5
15	Ransom		193.50	19.00	9.25	21.05	1.75	88.50	40.2	23.2
13	Bossier		200.50	17.75	8.50	20.63	1.00	96.50	44.7	18.8
	Grand mean		186.64	33.47	11.08	19.50	1.14	94.91		
	Standard error of cultivar mean		20.17	8.64	.70	1.46	.24	3.22		
	Coefficient of variation (%)		21.61	51.60	12.59	14.97	42.25	6.79		
	5% LSD Cultivar means (*****=ns)		57.45	24.60	1.99	4.16	*****	9.18		

Table 62. Experiment 769, 1980

Country: GABON
Region: AFRICA
Latitude: 1° 30′ N
Longitude: 11° 30′ W
Zone: 1
Elevation: 600 m

Site: ANGONE I OYEM
Cooperator(s): E.N.C.R., YVES ARCELIN

Date planted: March 23, 1981
Date harvested: May 1981
Fertilizer used (kg/ha): N. 10.0, P 4.4, K 16.7
Amount of moisture: 1218.35 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
2	UFV-1	578.03	33.00	93.00	3.75	2.25	41.25	67.50	28.10	1.00
39	IGH 23	544.69	39.00	92.75	3.50	1.75	45.00	70.00	33.63	1.25
37	G 2120	518.85	49.00	92.25	3.25	2.50	23.75	52.50	42.28	1.00
40	IGH 24	341.73	41.25	88.00	3.75	2.75	22.50	61.25	28.75	1.00
9	Jupiter	336.32	32.50	90.25	4.50	1.75	21.25	63.75	40.40	1.00
8	ICA Caribe	283.81	32.75	99.25	3.00	2.00	47.50	77.50	35.68	1.00
43	Alamo	227.96	36.50	95.25	3.50	2.50	36.25	51.25	24.38	1.00
64	ICA L-125	219.21	38.75	89.50	3.50	3.00	23.75	52.50	32.63	1.00
41	UFV-1 (BP-2)	201.29	31.25	79.25	2.25	4.00	56.25	73.75	29.08	1.00
14	Williams	72.10	30.50	75.50	2.50	2.25	63.75	87.50	28.23	1.25
	Grand mean	332.40	36.45	89.50	3.35	2.48	38.13	65.75	32.31	1.05
	Standard error of cultivar mean	162.29	1.96	4.34	.69	.56	15.73	14.32	6.57	.11
	Coefficient of variation (%)	97.65	10.73	9.69	41.23	45.12	82.51	43.56	40.65	21.69
	5% LSD Cultivar means (*****=ns)	*****	5.68	12.59	*****	*****	*****	*****	*****	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
2	UFV-1	2.75	129.25	7.63	43.55	17.45	1.50		46.1	21.8
39	IGH 23	1.25	111.25	10.40	16.33	18.75	2.75		43.1	20.0
37	G 2120	1.00	124.25	29.60	14.83	8.95	2.75		46.7	14.7
40	IGH 24	1.00	147.25	4.85	15.13	18.85	2.50		42.4	21.7
9	Jupiter	1.50	167.25	6.20	12.58	17.18	2.00		40.1	22.9
8	ICA Caribe	1.00	97.25	10.20	10.90	30.28	2.25		47.0	17.9
43	Alamo	1.25	105.25	9.25	12.38	16.38	1.75		45.3	20.2
64	ICA L-125	1.00	67.50	9.20	10.60	14.85	1.75		41.4	22.1
41	UFV-1 (BP-2)	1.75	152.50	8.18	27.85	13.35	1.75			
14	Williams	3.25	80.75	6.20	8.98	22.08	3.00		45.9	20.0
	Grand mean	1.58	118.25	10.17	17.31	17.81	2.20			
	Standard error of cultivar mean	.47	18.33	5.03	7.90	5.26	.44			
	Coefficient of variation (%)	60.20	31.00	98.85	91.28	59.07	40.18			
	5% LSD Cultivar means (*****=ns)	1.38	53.19	*****	*****	*****	*****			

Table 63. Experiment 102, 1981

Country: GABON
Region: AFRICA
Latitude: 0° 20′ S
Longitude: 9° 45′ E
Zone: 1
Elevation: 18 m

Site: NTOUM
Cooperator(s): G. VAN DE PLAS, J. VAN AMERONGEN

Date planted: March 20, 1981 Date harvested: June 1981
Fertilizer used (kg/ha): N 25.0, P 25.0, K 25.0
Amount of moisture: 551.3 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
46	Ecuador 2	2994.35	36.50	104.75					83.75	
7	ICA Tunia	2887.24	32.00	101.00					77.50	
10	Improved Pelican	2677.62	33.00	94.00					83.75	
2	UFV-1	2633.44	32.50	104.00					70.00	
9	Jupiter	2536.34	43.50	104.00					88.33 (3)	
41	UFV-1 (BP-2)	2514.25	32.00	98.00					90.00 (3)	
3	SJ-2	2485.50	34.00	94.00					80.00	
58	Williams 79	2419.23	26.00	85.00					55.00	
44	Foster	2265.04	32.00	84.50					50.00	
8	ICA Caribe	2242.53	40.50	107.00					81.25	
37	G 2120	2229.61	45.00	94.00					88.75	
43	Alamo	2145.01	39.00	98.00					75.00	
13	Bossier	2107.09	32.00	104.00					52.50	
39	IGH 23	2043.74	43.50	104.00					86.25	
40	IGH 24	1914.97	45.00	107.00					91.25	
19	Davis	1346.10	32.00	104.00					43.75	
	Grand mean	2340.13	36.16	99.20					74.35	
	Standard error of cultivar mean	199.78	.79	.48					16.23	
	Coefficient of variation (%)	17.07	4.34	.96					21.83	
	5% LSD Cultivar means (*****=ns)	569.07	2.24	1.36					*****	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
46	Ecuador 2		172.00	39.55	8.75	24.60		97.25		
7	ICA Tunia		259.00	43.00	11.75	20.30		96.25		
10	Improved Pelican		266.75	38.05	10.75	16.00		97.00		
2	UFV-1		217.75	43.55	6.50	17.02		97.25		
9	Jupiter		239.50	42.85	15.00	21.40		98.25		
41	UFV-1 (BP-2)		169.75	38.65	8.75	16.87		97.00		
3	SJ-2		201.25	39.00	12.00	18.50		97.75		
58	Williams 79		151.75	47.05	9.75	18.25		95.00		
44	Foster		238.75	36.60	9.25	16.45		93.75		
8	ICA Caribe		207.00	41.10	18.25	17.65		96.50		
37	G 2120		336.50	39.80	12.00	8.77		98.50		
43	Alamo		239.00	35.45	9.00	33.27		95.75		
13	Bossier		195.25	39.95	7.00	17.42		90.25		
39	IGH 23		206.75	38.80	14.00	20.27		96.00		
40	IGH 24		181.00	40.30	17.50	19.62		96.75		
19	Davis		59.50	41.25	6.25	24.70		98.25		
	Grand mean		208.84	40.31	11.03	19.45		96.34		
	Standard error of cultivar mean		16.06	3.01	1.83	3.78		2.44		
	Coefficient of variation (%)		15.38	14.95	33.21	38.89		5.06		
	5% LSD Cultivar means (*****=ns)	*****	45.74	*****	5.22	10.77		*****		

Table 64. Experiment 172, 1981

Country: GABON
Region: AFRICA
Latitude: 2° 3′ S
Longitude: 12° E
Zone: 1
Elevation: 195 m

Site: LEBAMBA
Cooperator(s): R. RAVOAVY ET MC INTYRE, V. DUPONT

Date planted: March 19, 1982 Date harvested: August 1982
Fertilizer used (kg/ha): N 20.0, P 28.6, K 33.2
Amount of moisture: 402.5 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
8	ICA Caribe	3544.00	54.25	140.00	4.00	3.50	73.75	85.00	58.25	1.25
9	Jupiter	3015.25	62.00	135.00	4.00	3.25	81.25	95.00	51.50	1.00
46	Ecuador 2	2659.25	53.75	130.00	4.00	4.00	78.75	86.25	38.75	1.00
10	Improved Pelican	2564.00	52.25	121.00	4.00	3.50	78.75	86.25	45.25	1.50
40	IGH 24	2526.50	62.25	147.00	4.00	4.00	81.25	88.75	48.50	1.00
2	UFV-1	2101.25	51.50	140.00	4.00	3.50	73.75	88.75	31.75	1.25
37	G 2120	2048.50	65.50	114.00	4.00	3.50	87.50	96.25	67.25	1.00
43	Alamo	2021.50	59.75	140.00	4.00	4.00	76.25	80.00	36.75	1.00
41	UFV-1 (BP-2)	1902.75	49.50	130.00	4.00	3.50	83.75	91.25	53.00	1.00
3	SJ-2	1886.00	53.50	114.00	4.25	4.00	93.75	95.00	58.50	1.00
16	Cobb	1679.00	47.25	121.00	4.00	3.75	76.25	90.00	34.25	1.00
15	Ransom	1383.75	45.50	121.00	4.00	3.50	88.75	93.75	33.00	1.00
19	Davis	1368.75	47.50	114.00	4.00	4.00	91.25	90.00	29.37	1.00
44	Foster	1228.75	43.00	108.75	4.00	4.00	78.75	95.00	34.00	1.00
58	Williams 79	1162.25	46.75	108.75	4.00	4.00	70.00	83.75	32.50	1.25
13	Bossier	858.75	43.50	107.50	4.00	3.25	53.75	86.25	33.00	1.00
	Grand mean	1996.89	52.36	124.50	4.02	3.70	79.22	89.45	42.85	1.08
	Standard error of cultivar mean	260.06	.62	.60	.12	.21	6.99	3.62	2.84	.16
	Coefficient of variation (%)	26.05	2.37	.96	5.81	11.26	17.64	8.10	13.28	29.58
	5% LSD Cultivar means (*****=ns)	740.77	1.77	1.71	*****	.59	*****	*****	8.10	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
8	ICA Caribe	1.00	217.00	18.50	12.05	16.75	1.50	95.00	45.8	19.2
9	Jupiter	1.00	115.50	35.50	11.65	21.00	1.75	100.00	37.9	22.4
46	Ecuador 2	1.00	151.75	18.50	11.95	19.75	2.00	80.00	39.7	22.2
10	Improved Pelican	1.00	217.50	17.50	10.25	18.75	3.00	25.00	46.3	21.1
40	IGH 24	1.00	164.75	21.00	13.00	17.75	1.00	80.00	36.9	22.3
2	UFV-1	1.00	228.50	11.00	8.90	20.25	4.00	20.00	43.0	21.4
37	G 2120	1.00	232.50	36.50	10.72	7.75	1.25	35.00	45.2	18.9
43	Alamo	1.00	218.75	15.75	9.72	20.50	2.00	75.00	40.4	21.6
41	UFV-1 (BP-2)	1.00	211.25	14.75	11.25	19.50	4.00	25.00	44.7	20.8
3	SJ-2	1.00	205.00	20.00	13.22	14.00	3.25		43.7	21.2
16	Cobb	1.00	202.00	13.75	8.00	21.25	4.75		39.5	23.2
15	Ransom	1.00	162.00	12.25	7.25	21.25	5.00		40.3	24.5
19	Davis	1.00	218.75	9.90	8.25	19.25	5.00		42.5	22.9
44	Foster	1.00	207.25	9.50	7.87	19.75	5.00		41.1	22.1
58	Williams 79	1.00	211.50	8.50	8.50	19.00	4.00		42.1	21.9
13	Bossier	1.00	202.25	9.50	7.82	18.00	5.00		43.7	21.9
	Grand mean	1.00	197.89	17.02	10.03	18.41	3.28	59.44		
	Standard error of cultivar mean	0.00	12.40	2.24	1.00	.83	.23	32.64		
	Coefficient of variation (%)	0.00	12.53	26.31	20.00	9.01	14.14	54.91		
	5% LSD Cultivar means (*****=ns)	0.00	35.31	6.38	2.86	2.36	.66	*****		

Table 65. Experiment 701, 1980

Country: GHANA
Region: AFRICA
Latitude: 6° 42′ N
Longitude: 1° 42′ W
Zone: 1
Elevation: 270 m

Site: KWADASO
Cooperator(s): JOHN K. PEPRAH

Date planted: May 14, 1980
Date harvested: August 1980
Soil type: pH 6.0, OM 1.3%, N .102 kg/ha, P 124.O kg/ha, K 513.6 kg/ha
Fertilizer used (kg/ha): N 25, P 25, K 25
Amount of moisture: 744.48 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
9	Jupiter	3119.79	32.75	113.00	4.00	4.00	85.00	62.50	70.00	3.00
10	Improved Pelican	3067.28	31.75	104.00	4.00	4.00	100.00	41.25	99.75	4.00
2	UFV-1	3066.03	30.50	109.25	4.00	3.75	95.00	47.50	43.75	2.00
43	Alamo	2923.08	39.25	108.00	4.00	4.00	96.25	77.50	57.25	3.00
19	Davis	2770.14	26.00	89.50	4.00	3.75	98.75	41.25	34.75	2.00
7	ICA Tunia	2697.21	26.75	102.25	4.00	3.50	86.25	71.25	78.50	3.50
3	SJ-2	2574.68	30.00	103.00	4.00	4.00	97.50	47.50	76.25	4.50
14	Williams	2368.39	20.50	78.25	4.00	4.00	96.25	30.00	51.00	3.25
8	ICA Caribe	2317.55	33.00	134.00	4.00	3.75	96.25	57.50	108.25	4.75
37	G 2120	2276.71	46.25	103.00	4.00	4.00	92.50	62.50	112.75	5.00
13	Bossier	2226.70	20.50	86.75	4.00	3.75	88.75	62.50	29.50	2.00
44	Foster	1934.97	19.50	88.50	4.00	4.00	90.00	57.50	27.50	2.00
45	ICA L-109	1924.55	44.00	122.50	4.00	4.00	82.50	56.25	81.00	3.50
15	Ransom	1865.79	21.00	94.50	4.00	3.50	88.75	40.00	34.50	2.00
16	Cobb	1834.53	20.75	103.00	3.50	3.50	97.50	67.50	34.50	2.00
63	Hutton	1611.99	24.75	103.00	4.00	4.00	96.25	75.00	30.75	2.00
	Grand mean	2411.21	29.20	102.66	3.97	3.84	92.97	56.09	60.63	3.03
	Standard error of cultivar mean	199.96	.51	1.52	.07	.17	4.34	8.61	2.33	.17
	Coefficient of variation (%)	16.59	3.53	2.97	3.64	9.04	9.34	30.70	7.68	11.47
	5% LSD Cultivar means (*****=ns)	569.58	1.47	4.34	.21	*****	*****	24.53	6.63	.50

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
9	Jupiter	1.00	149.50	43.50	16.25	28.25	2.25	80.00	44.5	22.0
10	Improved Pelican	1.00	120.50	63.50	16.25	19.75	2.75	72.00	44.6	21.3
2	UFV-1	1.00	146.25	39.25	10.75	23.25	2.75	64.00	45.1	21.6
43	Alamo	1.00	138.25	35.25	15.00	24.00	2.50	74.00	45.1	22.4
19	Davis	1.00	160.75	32.00	7.50	22.75	3.25	66.00	42.8	21.5
7	ICA Tunia	1.00	146.75	37.50	15.75	23.25	3.25	94.00	44.4	21.8
3	SJ-2	1.00	139.50	61.25	13.00	19.00	2.50	48.00	44.5	19.9
14	Williams	1.00	154.25	25.50	10.25	22.00	2.50	50.00	42.3	22.3
8	ICA Caribe	1.00	97.25	142.25	13.50	16.75	3.00	74.00	46.4	18.7
37	G 2120	1.00	134.50	146.25	9.50	10.50	2.00	80.00	47.5	16.1
13	Bossier	1.00	139.75	36.75	6.00	22.00	3.25	68.00	45.7	21.4
44	Foster	1.00	165.50	34.75	6.75	19.00	3.50	54.00	43.1	20.7
45	ICA L-109	1.00	83.50	93.75	14.25	16.75	4.00	72.00	46.7	18.6
15	Ransom	1.00	145.75	23.25	7.25	26.00	4.25	20.00	42.2	24.3
16	Cobb	1.00	143.25	20.75	7.75	23.75	4.25	44.00	43.4	22.0
63	Hutton	1.00	127.50	27.25	8.25	26.25	4.00	48.00	45.5	20.6
	Grand mean	1.00	137.05	53.92	11.13	21.45	3.13	63.00		
	Standard error of cultivar mean		8.03	7.83	.95	.80	.24			
	Coefficient of variation (%)		11.71	29.04	17.16	7.47	15.37			
	5% LSD Cultivar means (*****=ns)		22.86	22.30	2.72	2.28	.68			

Table 66. Experiment 709, 1980

Country: GHANA
Region: AFRICA
Latitude: 6° 43′ N
Longitude: 01° 36′ W
Zone: 1
Elevation: 293 m

Site: KUMASI
Cooperator(s): P. C. ADDAE, JOHN K. PEPRAH

Date planted: May 29, 1980
Date harvested: August 1980
Soil type: pH 4.6, OM 1.04%
Fertilizer used (kg/ha): N 25, P 25, K 25
Amount of moisture: 745.6 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodgin
7	ICA Tunia	921.02	33.50	94.75	3.00	4.00	80.00	88.75	34.50	1.00
9	Jupiter	896.01	35.00	103.00	4.00	4.25	77.00	76.25	51.80	1.25
2	UFV-1	833.50	35.00	94.50	4.00	4.25	73.75	71.25	34.30	1.00
37	G 2120	825.16	48.00	100.50	4.00	4.25	96.75	80.00	65.35	1.00
3	SJ-2	808.49	35.00	92.25	4.00	4.25	97.25	80.00	42.50	1.00
43	Alamo	791.82	41.00	104.00	3.50	4.25	85.00	75.00	32.00	1.25
16	Cobb	783.49	24.75	90.75	4.00	4.00	84.50	81.25	28.25	1.00
15	Ransom	741.81	24.75	84.50	3.50	4.00	80.00	77.50	37.75	1.00
63	Hutton	741.81	27.00	92.00	3.00	4.25	91.25	80.00	26.03	1.00
10	Improved Pelican	720.98	35.00	94.25	4.00	4.25	71.00	76.25	36.63	1.00
45	ICA L-109	720.98	48.00	105.00	4.00	4.25	80.00	78.75	41.50	1.00
13	Bossier	700.14	24.00	87.75	4.00	4.00	82.50	72.50	23.65	1.00
8	ICA Caribe	695.97	38.00	121.00	4.00	4.00	90.75	73.75	51.05	1.25
14	Williams	687.64	26.50	79.00	4.00	4.00	81.25	82.50	26.73	1.00
19	Davis	687.64	27.25	90.25	4.00	4.00	90.00	86.25	25.73	1.00
44	Foster	520.94	24.00	84.75	3.50	4.00	67.50	81.25	22.80	1.00
	Grand mean	754.84	32.92	94.89	3.78	4.13	83.03	78.83	36.28	1.05
	Standard error of cultivar mean	149.13	.94	2.30	.28	.15	5.58	6.01	5.20	.11
	Coefficient of variation (%)	39.51	5.70	4.85	14.65	7.11	13.45	15.24	28.65	20.53
	5% LSD Cultivar means (*****=ns)	*****	2.67	6.55	*****	*****	15.90	*****	14.81	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percen Oil
7	ICA Tunia	1.00	181.00	9.05	13.05	20.10	1.75	82.50	42.5	23.0
9	Jupiter	1.00	186.75	16.38	19.68	17.43	2.00	88.75	40.7	24.2
2	UFV-1	1.00	162.75	10.60	12.80	15.00	1.75	97.50	42.1	22.6
37	G 2120	1.00	213.25	21.43	17.90	8.20	1.75	87.50	45.0	18.3
3	SJ-2	1.00	222.50	12.00	18.90	12.95	1.25	88.75	42.5	21.1
43	Alamo	1.00	208.75	9.40	13.45	13.60	1.25	86.25	43.3	21.8
16	Cobb	1.00	203.75	10.00	10.75	16.35	1.50	83.75	39.3	23.7
15	Ransom	1.00	199.50	8.38	11.48	18.53	2.00	82.50	40.3	25.8
63	Hutton	1.00	206.00	8.73	12.40	19.88	2.00	83.75	41.9	22.9
10	Improved Pelican	1.00	223.25	11.13	15.50	14.08	1.25	95.00	44.0	22.1
45	ICA L-109	1.00	185.00	11.35	15.33	12.30	2.00	82.50	41.9	22.7
13	Bossier	1.00	198.00	10.50	9.25	17.55	1.25	97.50	43.1	21.8
8	ICA Caribe	1.00	198.75	16.50	13.08	15.60	1.50	80.00	44.1	19.9
14	Williams	1.00	208.50	5.23	10.93	19.83	2.25	98.75	42.3	23.9
19	Davis	1.00	201.25	7.70	12.13	19.03	1.75	80.00	42.2	22.5
44	Foster	1.25	186.25	7.43	10.93	16.40	1.25	83.75	42.5	22.3
	Grand mean	1.02	199.08	10.99	13.60	16.05	1.66	87.42		
	Standard error of cultivar mean	.06	14.97	2.41	.90	.56	.38	5.05		
	Coefficient of variation (%)	12.31	15.04	43.95	13.24	7.02	45.39	11.56		
	5% LSD Cultivar means (*****=ns)	*****	*****	6.88	2.56	1.61	*****	*****		

Table 67. Experiment 126, 1981

Country: GHANA
Region: AFRICA
Latitude: 7° N
Longitude: 2° W
Zone: 1
Elevation: 250 m

Site: MIM BRONG-AHAFO
Cooperator(s): E. SCHMIDT

Date planted: July 23, 1981
Date harvested: October 1981
Soil type: sand 10%, silt 60%, clay 30%, pH 6.8
Fertilizer used (kg/ha): N 50, P 50, K 50
Amount of moisture: 624 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
8	ICA Caribe		38.00	116.00	3.00	1.75	107.50	97.50	82.50	2.00
13	Bossier	2896.41	26.00	98.25	1.50	2.50	97.50	96.25	24.25	1.00
58	Williams 79	2650.53	23.50	92.00	2.75	2.50	98.75	82.50	37.25	2.75
7	ICA Tunia	2638.03	36.00	99.75	2.75	2.75	100.00	95.00	55.25	2.00
39	IGH 23	2596.35	45.00	106.00	3.25	2.25	95.00	96.25	52.00	2.75
46	Ecuador 2	2567.18	36.00	100.25	3.25	2.50	95.00	97.50	48.75	1.75
19	Davis	2525.50	36.00	97.50	3.00	1.75	98.75	97.50	24.50	1.25
41	UFV-1 (BP-2)	2410.07	36.00	101.50	3.00	2.25	98.75	96.25	61.75	3.00
43	Alamo	2400.48	41.00	103.00	3.25	4.00	98.75	88.75	44.25	3.25
9	Jupiter	2333.80	42.00	106.00	2.25	1.50	96.25	88.75	55.50	2.50
44	Foster	2302.54	27.75	92.00	2.75	2.25	98.75	92.50	25.75	2.25
2	UFV-1	2289.21	36.00	100.00	3.25	2.25	95.00	107.50	38.75	1.50
40	IGH 24	2250.45 (3)	46.00	106.00	3.25	2.75	100.00	96.25	65.25	2.75
3	SJ-2	2220.44	36.00	100.25	2.50	2.25	97.50	92.50	76.50	5.00
10	Improved Pelican	2167.10	36.00	97.75	3.25	2.00	97.50	98.75	59.75	2.25
37	G 2120	1694.78 (3)	49.00	98.25	3.75	2.25	98.75	88.75	90.50	5.00
	Grand mean	2410.80	36.89	100.91	2.92	2.34	98.36	94.53	52.66	2.56
	Standard error of cultivar mean	457.48	.76	1.15	.45	.44	3.93	4.11	5.43	.28
	Coefficient of variation (%)	18.98	4.10	2.28	30.96	37.19	8.00	8.69	20.61	21.67
	5% LSD Cultivar means (*****=ns)	*****	2.15	3.28	*****	*****	*****	*****	15.46	.79

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
8	ICA Caribe	1.75	118.25	90.75	10.00					
13	Bossier	1.00	121.75	30.25	7.75	23.75	3.50	5.00	47.7	21.7
58	Williams 79	1.75	153.75	28.50	8.75	23.50	2.50	19.00	42.4	22.8
7	ICA Tunia	1.50	141.75	33.25	10.25	23.75	2.50	20.00	42.9	22.0
39	IGH 23	1.50	92.25	58.25	8.75	22.75	2.50	13.00	48.8	19.8
46	Ecuador 2	1.50	65.75	58.50	9.75	23.75	3.75	86.00	46.3	22.4
19	Davis	1.25	118.25	31.25	8.25	21.50	2.50	8.00	43.7	21.7
41	UFV-1 (BP-2)	2.25	96.75	52.00	9.50	17.50	2.75	52.00	44.5	22.7
43	Alamo	1.50	122.50	41.25	8.25	18.50	2.50	19.00	46.1	22.2
9	Jupiter	1.75	102.75	53.50	10.50	23.75	3.25	20.00	44.3	23.1
44	Foster	1.75	127.00	31.25	8.75	22.50	3.00	12.00	42.8	23.1
2	UFV-1	1.00	125.25	34.75	9.25	19.25	2.50	30.00	46.4	21.1
40	IGH 24	1.75	129.00	71.00	10.75	24.33 (3)	2.00 (3)	35.00	43.2	21.6
3	SJ-2	1.75	132.50	46.00	8.50	18.00	2.25	68.00	43.5	20.1
10	Improved Pelican	1.75	103.25	43.25	10.75	17.50	3.00	80.00	44.1	22.8
37	G 2120	2.25	117.50	62.25	9.00	12.33 (3)	4.67 (3)	82.00 (3)	44.8	16.3
	Grand mean	1.62	116.77	47.87	9.30	20.93	2.86	35.84		
	Standard error of cultivar mean	.22	11.30	5.56	.56	4.23	.87	28.13		
	Coefficient of variation (%)	27.33	19.36	23.21	12.10	20.21	30.31	78.49		
	5% LSD Cultivar means (*****=ns)	.63	32.20	15.83	1.60	*****	*****	0.00		

Table 68. Experiment 150, 1981

Country: GHANA
Region: AFRICA
Latitude: 6° 41′ N
Longitude: 1° 42′ W
Zone: 1
Elevation: 270 m

Site: KWADASO
Cooperator(s): JOHN K. PEPRAH

Date planted: May 27, 1981
Date harvested: September 1981
Soil type: sand 74%, silt 19%, clay 7%, pH 5.44
Fertilizer used: (kg/ha): N 25.0, P 25.0, K 25.0
Amount of moisture: 678.8 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
41	UFV-1 (BP-2)	2169.60	28.00	95.00	4.00	4.00	90.00	21.67 (3)	74.50	2.50
2	UFV-1	2135.43	31.00	95.00	4.00	4.00	98.75	5.00 (1)	35.25	1.75
7	ICA Tunia	2131.26	28.00	92.00	3.75	3.75	90.00	15.00 (3)	58.25	2.00
10	Improved Pelican	1937.05	31.00	92.00	4.00	3.75	93.75	12.50	66.25	2.50
39	IGH 23	1819.95	42.25	99.00	4.50	4.25	98.75	68.75	64.75	2.75
3	SJ-2	1789.94	31.75	91.00	3.75	3.75	90.00	13.33 (3)	68.75	3.00
46	Ecuador 2	1772.44	31.00	95.75	4.25	4.00	100.00	13.75	48.00	2.00
37	G 2120	1687.00	47.25	91.00	4.25	4.00	92.50	40.00	84.50	3.75
43	Alamo	1644.91	39.75	94.00	4.25	4.00	97.50	28.33 (3)	38.75	1.50
40	IGH 24	1623.66	42.75	117.50	4.00	4.00	75.00	42.50	67.00	3.00
19	Davis	1514.05	24.25	85.75	4.00	4.00	92.50	85.00	25.25	1.00
9	Jupiter	1406.95	39.25	97.50	4.25	4.00	92.50	16.25	55.00	3.00
13	Bossier	1364.86	21.00	91.25	4.00	3.25	87.50	73.75	28.75	1.25
8	ICA Caribe	1196.07	37.00	123.00	4.00	4.00	72.50	55.00	114.50	4.00
58	Williams 79	1150.65	21.00	81.50	3.75	3.75	97.50	75.00	36.00	2.00
44	Foster	1021.04	17.25	88.50	4.00	4.00	96.25	67.50	24.25	1.25
	Grand mean	1647.80	32.03	95.61	4.05	3.91	91.56	42.81	55.61	2.33
	Standard error of cultivar mean	160.51	.54	1.59	.18	.15	6.79	29.38	3.50	.24
	Coefficient of variation (%)	19.48	3.40	3.32	8.80	7.92	14.84	68.64	12.58	20.33
	5% LSD Cultivar means (*****=ns)	457.20	1.55	4.52	*****	.44	*****	*****	9.97	.67

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
41	UFV-1 (BP-2)		122.25	54.00	11.50	18.00	2.25	75.75	44.3	20.4
2	UFV-1		139.00	30.75	11.25	17.00	2.00	96.75	46.7	20.1
7	ICA Tunia		144.00	37.50	13.00	23.25	2.00	93.00	45.0	20.6
10	Improved Pelican		127.00	43.75	13.00	17.25	2.00	81.00	46.6	19.9
39	IGH 23		120.75	50.00	19.00	15.75	2.00	88.00	45.4	16.5
3	SJ-2		101.50	61.75	13.00	16.75	2.00	86.50	44.9	19.1
46	Ecuador 2		75.50	45.00	11.50	21.00	2.00	72.50	46.5	19.9
37	G 2120		160.50	97.00	15.25	8.00	1.25	91.00	45.3	14.7
43	Alamo		139.50	27.50	15.00	15.50	2.00	90.25	46.2	18.9
40	IGH 24		83.50	95.00	12.50	15.75	3.00	74.50	44.2	18.8
19	Davis		84.50	34.00	6.25	23.00	3.00	70.25	44.7	20.7
9	Jupiter		93.50	43.50	13.00	16.75	2.00	80.00	44.9	19.2
13	Bossier		135.00	23.00	6.75	22.00	3.00	41.25	47.4	20.6
8	ICA Caribe		123.00	65.75	15.25	15.75	4.00	79.25	48.3	17.9
58	Williams 79		133.00	19.50	9.00	24.00	3.00	68.50	45.6	20.9
44	Foster		143.50	21.25	6.75	22.25	4.00	78.00	45.9	19.1
	Grand mean		120.37	46.83	12.00	18.25	2.47	79.16		
	Standard error of cultivar mean		11.56	5.37	.85	.49	.09	2.67		
	Coefficient of variation (%)		19.21	22.93	14.13	5.34	6.92	6.76		
	5% LSD Cultivar means (*****=ns)	*****	32.94	15.29	2.41	1.39	.24	7.62		

Table 69. Experiment 723, 1980

Country: GUATEMALA
Region: MESO-AMERICA
Latitude: 15° N
Longitude: 89° 45′ W
Zone: 4
Elevation: 200 m
Site: TECULUTAN
Cooperator(s): ALAN PRASKIN, DAVE TALBOT and FELIPE CRUZ FALLA
Date planted: May 27, 1980
Date harvested: September 1980

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
41	UFV-1 (BP-2)	3872.50	34.00						165.00	
2	UFV-1	3579.50	38.00						50.00	
7	ICA Tunia	3291.25	31.00						110.00	
45	ICA L-109	3095.00								
43	Alamo	2735.00	33.25						56.00	
63	Hutton	2618.50	18.25						35.00	
19	Davis	2617.75	27.00						35.00	
8	ICA Caribe	2491.25	46.00						165.00	
14	Williams	2490.00	15.50						60.00	
3	SJ-2	2238.75	34.50						120.00	
16	Cobb	2088.00	26.50						45.00	
37	G 2120	1557.50	51.50						132.50	
	Grand mean	2722.92	29.63						81.12	
	Standard error of cultivar mean	338.91	3.80						3.01	
	Coefficient of variation (%)	24.89	25.66						7.41	
	5% LSD Cultivar means (*****=ns)	975.15	10.94						8.65	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
41	UFV-1 (BP-2)									
2	UFV-1									
7	ICA Tunia									
45	ICA L-109									
43	Alamo									
63	Hutton									
19	Davis									
8	ICA Caribe									
14	Williams									
3	SJ-2									
16	Cobb									
37	G 2120									
	Grand mean									
	Standard error of cultivar mean									
	Coefficient of variation (%)									
	5% LSD Cultivar means (*****=ns)									

Table 70. Experiment 750, 1980

Country: GUATEMALA
Region: MESO-AMERICA
Latitude: 10° N
Longitude: 85° W
Zone: 1
Elevation: 50 m

Site: ARES-GUANACASTE
Cooperator(s): HECTOR MADRIGAL and FRANCES HSU, JUSTIN JACKSON

Date planted: August 20, 1980
Date harvested: December 1980
Soil type: sand 34%, silt 44%, clay 22%, pH 6.2
Fertilizer used (kg/ha): N 24, P 58.2, K 7.5
Amount of moisture: 1300 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodgin
2	UFV-1	2831.82	39.00	109.50					55.75	1.00
40	IGH 24	2638.03	41.00	115.00					90.00	1.75
14	Williams	2523.42	29.00	104.00					76.25	1.25
19	Davis	2487.16	30.00	104.00					67.00	1.00
7	ICA Tunia	2470.91	34.00	107.50					78.00	2.25
43	Alamo	2412.98	41.00	109.50					80.50	1.25
63	Hutton	2408.40	29.00	104.00					68.75	1.00
41	UFV-1 (BP-2)	2393.40	34.00	104.00					89.00	1.25
9	Jupiter	2322.96	34.00	108.00					86.25	1.25
45	ICA L-109	2280.87	45.00	113.50					74.00	2.00
39	IGH 23	2190.44	43.00	104.00					79.00	1.00
8	ICA Caribe	2177.10	39.00	115.00					85.25	2.25
44	Foster	1978.31	29.00	104.00					55.50	1.75
10	Improved Pelican	1914.13	35.00	107.50					80.75	1.50
3	SJ-2	1844.12	36.00	104.00					85.75	3.75
37	G 2120	1754.52	49.00	104.00					81.75	3.50
	Grand mean	2289.29	36.69	107.34					77.09	1.73
	Standard error of cultivar mean	144.90		1.82					3.30	.26
	Coefficient of variation (%)	12.66		3.39					8.55	30.48
	5% LSD Cultivar means (*****=ns)	412.74		5.18					9.39	.75

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percen Oil
2	UFV-1		171.00	30.70		18.80	1.00		46.6	20.8
40	IGH 24		162.00	26.50		17.70	2.25		41.4	23.8
14	Williams		145.25	23.65		21.40	2.50		43.6	23.9
19	Davis		193.75	23.55		20.45	1.50		43.4	22.5
7	ICA Tunia		165.50	30.60		17.90	1.25		42.5	22.5
43	Alamo		175.75	24.90		18.43	1.25		44.8	22.6
63	Hutton		171.75	26.85		25.23	2.50		45.3	20.8
41	UFV-1 (BP-2)		150.75	24.88		15.90	1.25		43.7	22.4
9	Jupiter		178.75	27.05		20.28	1.50		43.4	24.2
45	ICA L-109		135.25	42.10		13.45	2.00		46.8	19.5
39	IGH 23		163.50	39.10		19.13	1.50		47.1	20.6
8	ICA Caribe		128.00	29.90		13.83	2.00		48.3	17.9
44	Foster		140.25	23.95		21.58	2.75		44.0	22.4
10	Improved Pelican		142.75	22.90		14.70	1.75		45.0	22.6
3	SJ-2		127.75	30.40		14.10	1.75		43.7	21.5
37	G 2120		151.50	27.55		7.33	3.75		46.5	16.7
	Grand mean		156.47	28.41		17.51	1.91			
	Standard error of cultivar mean		12.27	4.58		.50	.28			
	Coefficient of variation (%)		15.69	32.21		5.75	29.06			
	5% LSD Cultivar means (*****=ns)		34.96	*****		1.43	.79			

Table 71. Experiment 129, 1981

Country: GUINEA-BISSAU
Region: AFRICA
Latitude: 12° N
Longitude: 16° W
Zone: 4
Elevation: 0 m

Site: GRANJA PRABIS, BISSAU
Cooperator(s): MIKE MAXEY

Date planted: May 21, 1981
Date harvested: August 1981
Soil type: sand 55%, silt 34%, clay 10%, pH 5.4
Fertilizer used (kg/ha): N 12.6, P 81
Amount of moisture: 1454.2
Number of irrigations: 2 (50.8 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
58	Williams 79								26.50	1.50
7	ICA Tunia	1225.43							57.00	1.75
37	G 2120	1204.32							62.75	2.00
39	IGH 23	1163.77							51.25	2.00
10	Improved Pelican	1079.15 (3)							58.75	1.50
40	IGH 24	1006.57							47.25	1.75
43	Alamo	987.12							28.00	1.75
3	SJ-2	942.68							64.25	1.75
9	Jupiter	910.46							43.00	2.00
2	UFV-1	800.48							24.00	1.75
8	ICA Caribe	644.38							97.00	2.00
46	Ecuador 2	591.61							36.25	2.00
41	UFV-1 (BP-2)	556.61							73.50	2.00
44	Foster	453.29 (3)							21.50	1.75
13	Bossier	305.52							19.25	1.75
19	Davis	257.20							23.00	2.25
	Grand mean	810.03							45.83	1.84
	Standard error of cultivar mean	451.46							3.91	.20
	Coefficient of variation (%)	55.73							17.07	22.05
	5% LSD Cultivar means (*****=ns)	*****							11.14	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
58	Williams 79	1.00	27.75	17.75	7.75	14.97		.75	44.2	22.5
7	ICA Tunia	1.00	39.25	58.50	12.75	15.35		8.75	41.4	24.1
37	G 2120	1.00	35.75	134.75	14.25	6.53		76.50	43.7	17.5
39	IGH 23	1.75	31.25	70.00	10.50	16.02		.50	45.3	22.7
10	Improved Pelican	1.25	26.75	62.75	9.00	11.17		14.00	44.4	22.6
40	IGH 24	1.25	21.25	99.75	8.50	14.22		7.25	41.3	24.8
43	Alamo	1.50	31.50	53.50	6.00	14.07		1.50	44.8	23.9
3	SJ-2	1.00	29.75	89.75	9.75	10.95		12.00	42.6	21.7
9	Jupiter	1.50	26.00	67.00	11.00	17.30		1.50	43.8	24.0
2	UFV-1	1.00	26.75	59.50	8.25	13.30		11.00	44.5	21.3
8	ICA Caribe	1.75	38.75	70.75	14.25	11.80		14.50	49.4	17.5
46	Ecuador 2	1.00	16.75	76.25	10.00	14.45		10.25	44.5	22.5
41	UFV-1 (BP-2)	1.25	28.00	63.75	12.25	12.90		3.00	44.6	21.5
44	Foster	1.00	28.50	28.25	7.75	14.63 (3)		0.00	40.2	23.3
13	Bossier	1.00	30.25	29.50	6.25	14.65		0.00	43.3	23.7
19	Davis	1.25	30.25	30.00	8.75	14.97		.75	43.0	23.0
	Grand mean	1.22	29.28	63.23	9.81	13.57		10.30		
	Standard error of cultivar mean	.19	4.68	9.04	1.01	2.68		18.65		
	Coefficient of variation (%)	30.43	31.98	28.60	20.57	19.73		181.07		
	5% LSD Cultivar means (*****=ns)	.53	*****	25.75	2.88	*****		*****		

Table 72. Experiment 184, 1981

Country: GUINEA-BISSAU
Region: AFRICA
Latitude: 12° N
Longitude: 17° W
Zone: 4
Elevation: 500 m
Site: CONTUBOEL
Cooperator(s): CENTRO NACIONAL DE EXPERIMENTACAO
Date planted:
Date harvested:
Substitute cultivar: MV-1

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodgin
43	Alamo	1315.68	43.75	97.00					30.50	1.00
2	UFV-1	1293.18	37.50	99.50					24.25	1.00
9	Jupiter	1218.58	48.00	109.75					48.25	1.00
8	ICA Caribe	1017.70	47.00	131.25					87.00	1.00
3	SJ-2	780.78	37.75	95.25					49.50	1.25
40	IGH 24	775.78	53.00	105.25					39.75	1.00
44	Foster	671.38	30.00	89.50					20.25	1.00
41	UFV-1 (BP-2)	658.46	37.75	89.25					52.50	1.25
15	Ransom	655.96	30.50	89.00					22.75	1.00
10	Improved Pelican	638.04	37.75	91.25					49.50	1.00
13	Bossier	620.96	30.75	86.75					21.50	1.25
19	Davis	615.75	36.50	89.50					21.75	1.00
58	Williams 79	520.94	31.50	82.00					31.00	1.00
37	G 2120	504.27	53.00	100.00					53.00	1.00
227	MV-1	487.39	37.25	90.00					22.00	1.00
16	Cobb	390.70	33.00	87.25					25.50	1.00
	Grand mean	760.35	39.06	95.78					37.44	1.05
	Standard error of cultivar mean	136.69	.91	2.82					4.01	.11
	Coefficient of variation (%)	35.95	4.64	5.89					21.45	20.53
	5% LSD Cultivar means (*****=ns)	389.34	2.58	8.04					11.44	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percen Oil
43	Alamo		165.50	20.75	7.50	17.12	1.33 (3)	94.50		
2	UFV-1		172.75	20.75	6.50	15.62	1.33 (3)	94.75		
9	Jupiter		120.75	26.25	11.25	16.50	1.00 (3)	86.00		
8	ICA Caribe		165.50	23.00	14.00	18.37	2.00 (3)	89.50		
3	SJ-2		173.75	17.25	11.75	13.50	2.00 (3)	91.50		
40	IGH 24		137.50	23.50	10.50	14.75	1.33 (3)	91.00		
44	Foster		169.75	10.75	5.50	16.00 (3)	2.67 (3)	89.75		
41	UFV-1 (BP-2)		159.25	13.00	10.75	15.50	2.67 (3)	87.50		
15	Ransom		130.25	12.50	6.00	19.00	2.33 (3)	89.00		
10	Improved Pelican		158.00	17.50	8.50	12.37	2.00 (3)	90.75		
13	Bossier		142.25	14.75	5.25	16.37	3.33 (3)	89.75		
19	Davis		134.50	11.75	6.50	16.12	2.00 (3)	91.25		
58	Williams 79		146.00	8.75	8.75	18.87	2.00 (3)	91.25		
37	G 2120		261.75	12.25	14.50	10.12	2.00 (3)	90.00		
227	MV-1		168.00	13.25	8.50	14.00	1.00 (3)	84.00		
16	Cobb		136.75	8.67 (3)	7.50	19.50	1.67 (3)	89.75		
	Grand mean		158.89	16.03	8.95	15.86	1.92	90.02		
	Standard error of cultivar mean		8.33	8.55	1.14	3.17	.41	2.32		
	Coefficient of variation (%)		10.48	53.35	25.40	19.99	36.64	5.15		
	5% LSD Cultivar means (*****=ns)		23.73	*****	3.24	*****	1.17	*****		

Table 73. Experiment 206, 1981

Country: INDIA
Region: ASIA
Latitude: 29° 10′ N
Longitude: 75° 46′ E
Zone: 7
Elevation: 215.2 m

Site: HISSAR
Cooperator(s): B. D. CHAUDHARY

Date planted: August 5, 1981
Date harvested: October 1981
Fertilizer used (kg/ha): N 20.0, P 60.0, K 20.0
Amount of moisture: 112 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
75	Braxton	2642.57		93.50					47.80	
51	Celest	2225.87		93.25					44.70	
52	Bay	1875.15		84.00					29.85	
35	Crawford	1718.89		84.50					49.05	
49	Centennial	1677.22		84.50					30.25	
53	Ware	1621.66		81.00					19.30	
48	Gail	1444.56		84.25					23.25	
19	Davis	757.00		83.75					27.15	
	Grand mean	1745.37		86.09					33.92	
	Standard error of cultivar mean	131.70		.57					1.47	
	Coefficient of variation (%)	15.09		1.33					8.68	
	5% LSD Cultivar means (*****=ns)	387.33		1.69					4.33	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
75	Braxton		94.75	32.08	8.80	13.30				
51	Celest		94.75	29.87	11.45	14.62				
52	Bay		110.00	20.70	4.25	13.67				
35	Crawford		73.75	19.62	5.00	13.25				
49	Centennial		62.00	20.73	4.05	12.50				
53	Ware		101.25	14.17	4.15	19.05				
48	Gail		83.25	23.37	3.25	14.65				
19	Davis		20.50	28.38	3.90	14.05				
	Grand mean		80.03	23.61	5.61	14.39				
	Standard error of cultivar mean		4.58	2.00	.37	.14				
	Coefficient of variation (%)		11.45	16.93	13.17	1.94				
	5% LSD Cultivar means (*****=ns)		13.48	5.88	1.09	.41				

Table 74. Experiment 708, 1980

Country: INDONESIA
Region: ASIA
Latitude: 6° 20′ S
Longitude: 107° 39′ E
Zone: 1
Elevation: 15 m

Site: SUKAMANDI
Cooperator(s): OMAR O. HIDAYAT, YAW BAAFI NIMOH

Date planted: May 31, 1980
Date harvested: August 1980
Fertilizer used (kg/ha): N 25, P 26.4, K 24.9
Substitute cultivar: Orba

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
44	Foster	776.41	30.75	76.25	2.25	2.00	73.75	87.00	17.25	1.00
16	Cobb	722.64	30.25	78.25	4.00	3.25	59.25	88.75	22.50	1.00
19	Davis	704.31	30.50	77.25	4.00	3.00	84.75	97.25	23.00	1.00
13	Bossier	684.30	30.00	77.50	4.00	3.00	61.00	94.75	17.25	1.00
43	Alamo	671.80	36.00	92.25	3.75	4.00	95.25	81.75	28.25	1.00
10	Improved Pelican	654.30	33.50	81.75	5.00	4.00	93.50	82.50	48.00	1.00
14	Williams	644.71	31.75	77.75	3.75	3.75	78.75	98.75	35.25	1.00
2	UFV-1	628.04	33.25	87.00	3.75	3.50	79.25	93.25	22.75	1.00
37	G 2120	607.20	44.50	94.00	3.00	2.25	71.75	97.50	70.75	2.00
15	Ransom	558.90	30.75	80.50	3.75	3.75	90.00	98.75	21.75	1.00
63	Hutton	542.61	30.25	87.00	3.75	3.50	91.25	98.25	19.25	1.00
7	ICA Tunia	530.94	31.75	87.00	4.00	3.00	82.75	95.00	37.50	1.00
9	Jupiter	523.85	34.50	91.50	4.00	2.25	89.50	94.50	41.25	1.00
45	ICA L-109	425.92	43.25	94.75	4.00	3.75	63.75	81.25	30.50	1.00
8	ICA Caribe	420.50	36.00	96.50	3.75	3.00	95.00	85.25	56.00	1.00
5	Orba	352.99	33.50	95.50	3.25	3.00	18.50	54.00	43.50	1.00
	Grand mean	590.59	33.78	85.92	3.75	3.19	76.75	89.28	33.42	1.06
	Standard error of cultivar mean	130.74	.50	.76	.21	.19	2.04	3.34	1.99	
	Coefficient of variation (%)	44.27	2.95	1.78	10.98	11.81	5.32	7.48	11.92	
	5% LSD Cultivar means (*****=ns)	*****	1.42	2.18	.59	.54	5.82	9.51	5.67	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
44	Foster	1.00	180.50		4.75	15.40	2.25	97.00		
16	Cobb	1.00	99.75		5.50	15.80	2.50	81.00		
19	Davis	1.00	218.75		6.15	13.88	2.00	97.00		
13	Bossier	1.00	136.00		5.10	14.75	2.00	91.25		
43	Alamo	1.00	166.50		7.60	12.58	3.00	95.75		
10	Improved Pelican	1.00	152.75		9.93	10.18	3.50	89.50		
14	Williams	1.00	162.00		7.45	17.03	2.75	97.00		
2	UFV-1	1.00	180.25		5.70	11.63	4.00	97.00		
37	G 2120	1.00	233.75		9.60	5.80	4.75	96.75		
15	Ransom	1.00	176.50		6.58	18.68	3.00	94.75		
63	Hutton	1.00	83.25		6.23	17.78	2.00	67.25		
7	ICA Tunia	1.00	136.25		6.68	14.48	3.00	90.00		
9	Jupiter	1.00	157.00		6.80	12.18	4.75	94.75		
45	ICA L-109	1.00	85.50		6.20	11.03	3.50	61.25		
8	ICA Caribe	1.00	120.50		6.80	8.88	3.00	85.00		
5	Orba	1.00	255.75		7.45	10.65	2.00	95.25		
	Grand mean	1.00	159.06		6.78	13.17	3.00	89.41		
	Standard error of cultivar mean		21.07		.60	1.14	.20	5.14		
	Coefficient of variation (%)		26.50		17.77	17.31	13.61	11.50		
	5% LSD Cultivar means (*****=ns)		60.02		1.72	3.25	.58	14.64		

Table 75. Experiment 710, 1980

Country: INDONESIA
Region: ASIA
Latitude: 3° 32′ N
Longitude: 98° 39′ E
Zone: 1
Elevation: 27 m

Site: MEDAN
Cooperator(s): I.R.BARINGIN AND B.O.P. TAMPUBOLON

Date planted: April 12, 1980
Date harvested: July 1980
Soil type: sand 39%, silt 25%, clay 36%, pH 5.9%
Fertilizer used (kg/ha): N 25.0, P 25.0, K 25.0
Amount of moisture: 903 mm
Substitute cultivar: L. Pakam

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
10	Improved Pelican	2512.70	35.75	103.00	4.00	4.00	90.25		76.45	2.00
43	Alamo	1984.42	31.50	116.00	4.00	3.75	86.50		32.35	1.00
8	ICA Caribe	1804.31	51.50	129.50	4.00	3.25	92.50		104.03	5.00
37	G 2120	1576.05	47.25	96.25	4.00	4.00	84.00		88.82	4.75
7710	L. Pakam	1533.92	38.50	102.00	4.00	4.00	68.00		68.00	2.25
16	Cobb	1182.96	24.00	100.00	4.00	4.00	89.75		20.83	1.00
7	ICA Tunia	1163.06	35.50	108.00	4.00	4.00	56.00		42.18	1.00
9	Jupiter	1126.02	39.25	116.00	4.00	4.00	85.50		41.35	1.00
19	Davis	1067.68	28.00	99.25	4.00	4.00	77.50		22.08	1.00
13	Bossier	1032.49	23.50	97.00	4.00	4.00	79.75		21.33	1.00
2	UFV-1	926.00	30.75	116.00	4.00	3.50	80.50		30.98	1.00
14	Williams	760.25	26.00	88.50	4.00	3.75	78.75		40.45	1.00
45	ICA L-109	748.21	48.00	128.00	4.00	4.00	81.00		34.73	1.25
44	Foster	742.19	22.75	97.00	4.00	4.00	83.25		19.08	1.00
63	Hutton	647.27	23.25	100.00	4.00	4.00	77.00		19.98	1.00
15	Ransom	607.92	25.25	100.00	4.00	4.00	81.50		21.30	1.00
	Grand mean	1213.47	33.17	106.03	4.00	3.89	80.73		42.74	1.64
	Standard error of cultivar mean	94.73	.41	.54		.17	3.08		1.47	.14
	Coefficient of variation (%)	15.61	2.44	1.01		8.74	7.62		6.87	17.49
	5% LSD Cultivar means (*****=ns)	269.83	1.15	1.53		*****	8.76		4.18	.41

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
10	Improved Pelican	1.00	151.00	70.05	14.95	10.60				
43	Alamo	1.00	149.50	37.00	10.90	12.58				
8	ICA Caribe	1.00	125.25	56.00	19.08	9.18				
37	G 2120	1.00	171.25	74.35	15.85	13.43				
7710	L. Pakam	1.00	160.75	41.80	16.18	9.95				
16	Cobb	1.00	169.25	17.55	5.30	15.38				
7	ICA Tunia	1.00	127.75	33.85	8.93	14.70				
9	Jupiter	1.00	141.50	30.10	13.30	13.53				
19	Davis	1.00	169.50	16.30	6.28	5.55				
13	Bossier	1.00	158.75	23.20	6.25	14.18				
2	UFV-1	1.00	147.25	26.05	8.88	14.08				
14	Williams	1.00	174.75	20.05	8.88	16.70				
45	ICA L-109	1.00	126.25	30.05	15.98	10.18				
44	Foster	1.00	175.00	17.35	3.98	14.08				
63	Hutton	1.00	145.75	13.25	4.98	15.78				
15	Ransom	1.00	153.50	14.00	5.78	16.53				
	Grand mean	1.00	152.94	32.56	10.34	12.90				
	Standard error of cultivar mean		5.41	1.30	.62	.28				
	Coefficient of variation (%)		7.08	7.98	12.08	4.40				
	5% LSD Cultivar means (*****=ns)		15.42	3.70	1.78	.81				

Table 76. Experiment 125, 1981

Country: INDONESIA
Region: ASIA
Latitude: 3° 32′ N
Longitude: 98° 39′ E
Zone: 1
Elevation: 27 m

Site: MEDAN
Cooperator(s): BARINGIN AND B. O. P. TAMPUBOLON

Date planted: April 28, 1981
Date harvested: July 1981
Soil type: sand 55%, silt 18%, clay 27%, pH 6.0
Fertilizer used (kg/ha): N 25.0, P 25.0, K 25.0
Amount of moisture: 563.9 mm
Number of irrigations: 3 (50 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
37	G 2120	1086.76	49.25	107.00	2.75	1.50	95.00	96.50	63.62	2.00
3	SJ-2	915.06	33.75	102.25	2.50	1.75	95.00	100.00	54.32	2.00
7	ICA Tunia	843.96	30.50	103.00	3.00	1.25	96.25	100.00	48.82	1.75
40	IGH 24	796.74	48.00	108.75	4.00	1.75	68.75	100.00	47.57	2.75
46	Ecuador 2	756.82	32.00	98.00	3.00	1.00	95.00	100.00	42.50	1.25
2	UFV-1	716.43	38.00	105.75	3.00	2.50	97.50	97.50	40.27	2.00
7710	L. Pakam	694.93	34.25	100.75	3.00	1.75	92.50	100.00	65.10	1.50
58	Williams 79	661.84	28.00	95.25	3.25	2.00	93.75	100.00	44.87	1.25
43	Alamo	633.29	42.00	110.75	3.00	2.00	91.25	100.00	37.27	3.25
9	Jupiter	623.62	42.75	116.00	2.50	1.00	97.50	95.00	48.92	3.00
8	ICA Caribe	524.44	42.50	120.00	3.50	1.75	90.00	90.00	74.30	1.25
13	Bossier	502.81	27.75	92.75	2.75	1.50	90.00	100.00	29.10	1.00
44	Foster	502.60	27.25	91.75	3.00	2.00	98.75	100.00	27.75	1.25
19	Davis	400.41	27.50	91.00	2.75	2.00	97.50	100.00	29.37	1.00
41	UFV-1 (BP-2)	303.81	32.25	98.75	2.50	2.00	85.00	92.50	70.32	3.50
39	IGH 23	224.88	43.75	111.75	3.50	3.00	98.75	100.00	65.47	2.50
	Grand mean	636.78	36.22	103.34	3.00	1.80	92.66	98.22	49.35	1.95
	Standard error of cultivar mean	32.31	.62	.50	.42	.34	6.89	1.89	1.44	.40
	Coefficient of variation (%)	10.15	3.44	.96	28.33	37.29	14.86	3.86	5.82	41.25
	5% LSD Cultivar means (*****=ns)	92.02	1.77	1.42	*****	.95	*****	5.39	4.09	1.15

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
37	G 2120	1.00	178.75	66.95	11.85	7.02			46.0	15.1
3	SJ-2	1.00	173.50	34.20	11.95	14.27			43.5	20.5
7	ICA Tunia	1.00	148.75	23.00	11.37	15.77			44.5	20.3
40	IGH 24	1.00	171.75	29.37	11.65	13.82			41.9	21.0
46	Ecuador 2	1.00	161.00	30.85	13.60	14.50			46.4	20.9
2	UFV-1	1.00	170.00	24.80	8.12	11.97			45.7	18.8
7710	L. Pakam	1.00	174.50	36.40	11.20	11.15			44.8	16.5
58	Williams 79	1.00	143.75	16.65	10.02	17.10			45.9	21.2
43	Alamo	1.00	161.75	26.80	11.72	12.62			46.5	20.2
9	Jupiter	1.00	161.25	29.40	12.87	13.85			45.5	20.6
8	ICA Caribe	1.00	160.50	40.45	11.55	9.57			48.1	14.9
13	Bossier	1.00	172.25	20.85	6.77	13.77			45.7	20.3
44	Foster	1.00	160.75	19.05	6.80	13.40			44.7	20.0
19	Davis	1.00	150.75	17.45	7.85	13.10			45.9	19.3
41	UFV-1 (BP-2)	1.00	156.25	26.55	14.10	14.07			46.3	18.9
39	IGH 23	1.00	131.50	24.00	13.45	13.12			47.2	18.0
	Grand mean	1.00	161.06	29.17	10.93	13.07				
	Standard error of cultivar mean	0.00	8.85	2.02	.91	.39				
	Coefficient of variation (%)	0.00	10.99	13.87	16.61	5.90				
	5% LSD Cultivar means (*****=ns)	0.00	25.20	5.76	2.59	1.10				

Table 77. Experiment 909, 1980

Country: IRAQ
Region: MIDDLE EAST
Latitude: 33° 20′ N
Longitude: 44° 24′ E
Zone: 10
Elevation: 34.4 m
Site: BAGHDAD
Cooperator(s): S. S. RAJAN
Date planted: April 22, 1980
Date harvested: July 1980
Fertilizer used (kg/ha): N 100, P 43.6
Number of irrigations: 17

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
57	Corsoy 79	1353.44							48.05	1.00
38	McCall	1278.46							42.65	1.00
36	Evans	1161.19							37.45	1.00
54	Chippewa 64	1123.12							54.85	1.00
61	Cumberland	963.17							48.20	1.00
59	Will	797.84							50.35	1.00
56	Coles	780.53							49.60	1.00
14	Williams	759.39							73.40	1.00
55	Harlon	744.01							49.75	1.00
60	Kent	633.66							75.75	1.00
58	Williams 79	522.92							63.55	1.00
50	DeSoto	441.79							46.10	1.00
21	Calland	408.34							74.40	1.00
32	Columbus	248.77							69.30	1.00
62	York	113.43							52.20	1.00
51	Celest	111.89							78.40	1.00
	Grand mean	715.12							57.12	1.00
	Standard error of cultivar mean	168.83							7.64	
	Coefficient of variation (%)	47.22							26.75	
	5% LSD Cultivar means (*****=ns)	480.90							21.76	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
57	Corsoy 79	1.00	191.25	42.25	23.00	10.10	4.25	19.30		
38	McCall	1.00	174.25	39.25	22.25	10.40	3.75	18.49		
36	Evans	1.00	153.75	37.25	23.25	12.58	4.00	19.46		
54	Chippewa 64	1.00	207.50	42.25	23.75	10.45	3.75	16.86		
61	Cumberland	1.00	121.25	43.00	26.50	9.45	4.50	16.04		
59	Will	1.00	144.75	40.50	20.50	7.88	4.50	14.90		
56	Coles	1.00	139.25	56.50	24.25	9.80	5.00	16.19		
14	Williams	1.00	145.00	41.00	28.00	8.78	4.25	16.05		
55	Harlon	2.50	144.75	29.75	23.25	12.93	5.00	17.08		
60	Kent	1.00	125.25	30.25	27.75	9.08	4.75	16.90		
58	Williams 79	1.00	107.75	33.00	25.50	9.00	4.25	13.72		
50	DeSoto	1.00	145.50	44.25	26.25	9.00	5.00	15.43		
21	Calland	1.00	117.75	43.75	25.50	10.78	4.75	15.15		
32	Columbus	1.00	149.25	25.50	26.50	7.73	4.75	16.64		
62	York	1.00	106.75	28.75	20.50	9.05	4.75	16.66		
51	Celest	1.00	117.50	45.25	28.50	10.68	3.75	16.81		
	Grand mean	1.09	143.22	38.91	24.70	9.85	4.44	16.60		
	Standard error of cultivar mean	.07	18.58	6.02	2.14	.51	.23	.61		
	Coefficient of variation (%)	13.20	25.94	30.94	17.31	10.34	10.56	7.38		
	5% LSD Cultivar means (*****=ns)	.21	52.91	*****	*****	1.45	.67	1.74		

Table 78. Experiment 313, 1981

Country: IRAQ
Region: MIDDLE EAST
Latitude: 36° 43′ N
Longitude: 43° 9′ E
Zone: 10
Elevation: 223 m

Site: MOSUL
Cooperator(s): SULAIMAN DAWOOD SULAIMAN, S. S. RAJAN

Date planted: April 26, 1981
Date harvested: August 1981
Soil type: sand 40.38%, silt 44.98%, clay 14.5%, pH 8.3, OM 0.75%, P25 kg/ha
Fertilizer used (kg/ha): N 27.4
Amount of moisture: 24.1 mm
Number of irrigations: 21

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodgin
69	Essex	2721.38	61.75	169.00	2.60				64.75	1.00
51	Celest	2252.53	82.75	170.00	3.45				104.00	4.00
59	Will	2192.10	38.00	113.00	2.25				66.60	1.00
73	Century	2158.76	35.50	150.00	2.85				73.00	1.50
72	Amcor	2148.35	36.00	147.25	3.35				64.70	1.75
57	Corsoy 79	1900.38	35.25	106.25	3.15				78.30	3.50
61	Cumberland	1887.88	38.50	142.50	2.55				90.50	1.75
71	Hodgson 78	1875.37	34.75	116.50	3.35				59.30	1.75
38	McCall	1829.53	29.00	86.75	3.55				49.60	1.00
74	Pella	1787.86	36.00	149.25	3.10				79.70	1.00
60	Kent	1771.19	43.00	148.50	3.50				87.15	2.00
36	Evans	1742.01	30.25	112.00	2.55				41.85	1.00
70	Hardin	1721.18	34.00	107.00	2.90				66.20	3.00
50	DeSoto	1708.67	39.50	149.00	2.70				89.20	1.75
58	Williams 79	1579.48	39.00	143.00	3.60				91.25	2.25
35	Crawford	1514.89	43.00	148.50	3.05				103.65	2.75
	Grand mean	1924.47	41.02	134.91	3.03				75.61	1.94
	Standard error of cultivar mean	306.54	.62	.60	.40				3.59	.31
	Coefficient of variation (%)	31.86	3.03	.90	26.15				9.50	32.30
	5% LSD Cultivar means (*****=ns)	*****	1.77	1.72	*****				10.23	.89

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percen Oil
69	Essex	3.75	136.75	134.75	10.35	14.95	1.25	46.00	45.3	18.2
51	Celest	1.00	28.50	166.75	15.70	15.17	1.00	92.00	44.7	17.9
59	Will	1.00	195.75	40.75	9.65	11.52	2.50	71.00	46.5	16.4
73	Century	4.25	187.50	45.00	11.55	10.95	4.00	68.00	45.4	16.0
72	Amcor	1.25	55.25	122.50	8.70	13.80	3.25	64.00	45.6	15.7
57	Corsoy 79	2.25	216.75	38.25	8.77	11.40	3.25	55.00	44.7	17.3
61	Cumberland	2.00	119.75	59.00	9.55	12.77	3.75	57.00	47.6	14.0
71	Hodgson 78	1.50	72.25	59.00	9.37	12.30	3.50	52.00	43.4	19.9
38	McCall	2.50	230.50	24.50	7.57	11.42	1.50	41.00	41.6	18.5
74	Pella	3.25	144.50	38.25	11.05	14.35	4.50	72.00	45.7	16.3
60	Kent	3.25	120.75	47.50	11.40	14.25	3.50	74.00	46.4	16.6
36	Evans	2.00	88.50	41.00	8.10	12.27	3.50	41.00	42.9	19.2
70	Hardin	1.50	175.25	34.00	10.55	10.02	4.25	51.00	43.5	18.8
50	DeSoto	2.50	76.00	89.50	8.95	11.35	3.50	50.00	46.6	16.2
58	Williams 79	2.25	137.75	59.25	13.50	13.05	2.75	55.00	47.5	12.5
35	Crawford	1.00	89.50	123.00	12.85	11.67	2.75	69.00	47.1	15.7
	Grand mean	2.20	129.70	70.19	10.48	12.58	3.05	59.87		
	Standard error of cultivar mean	.31	17.13	16.51	1.52	1.05	.46	13.83		
	Coefficient of variation (%)	27.76	26.42	47.06	29.10	16.73	30.49	23.09		
	5% LSD Cultivar means (*****=ns)	.87	48.80	47.04	4.34	3.00	1.32	*****		

Table 79. Experiment 917, 1980

Country: KOREA
Region: ASIA
Latitude: 37° 17′ N
Longitude: 129° E
Zone: 10
Elevation: 37 m

Site: SUWEON
Cooperator(s): EUN-HI HONG

Date planted: June 13, 1980
Date harvested: September 1980
Soil type: bonyrang series, sandy loam, pH 6.31
Fertilizer used (kg/ha): N 31.6, P 67.2, K 39.5
Amount of moisture: 685.8 mm
Substitute cultivars: Suweon 86 and Kwangkyo

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
61	Cumberland	2973.87	37.50	113.25	2.05	2.85	58.75	81.25	73.75	1.00
6960	Suweon 86	2911.96	49.25	120.25	1.90	2.95	42.50	81.25	56.25	1.00
58	Williams 79	2751.84	39.75	115.00	2.13	2.90	45.00	86.25	72.75	1.00
50	DeSoto	2679.82	41.00	122.50	2.10	2.88	57.50	80.00	79.00	1.50
14	Williams	2576.24	39.50	114.75	1.78	2.85	32.50	75.00	74.00	1.00
60	Kent	2518.50	43.50	126.25	1.93	2.70	46.25	85.00	75.75	1.75
9170	Kwangkyo	2463.14	53.00	123.50	2.48	3.35	41.25	77.50	79.75	4.00
59	Will	2318.50	36.75	112.75	1.45	2.78	42.50	77.50	51.75	1.00
51	Celest	2281.00	60.00	114.75	1.90	2.93	68.75	81.25	72.00	2.25
57	Corsoy 79	2179.21	31.75	98.50	2.93	2.53	33.75	86.25	68.25	1.25
54	Chippewa 64	2047.66	32.25	97.50	2.83	2.80	35.00	85.00	65.75	1.25
62	York	2018.49	55.00	119.00	2.18	2.68	50.00	85.00	70.00	1.75
38	McCall	1674.44	26.25	86.75	2.73	2.93	25.00	73.75	62.25	1.00
56	Coles	1616.70	31.00	99.75	2.83	2.83	28.75	82.50	64.50	1.25
55	Harlon	1606.58	31.25	93.25	2.13	2.38	36.25	85.00	56.50	1.00
36	Evans	1378.00	30.75	89.00	2.68	2.95	23.75	83.75	61.25	1.00
	Grand mean	2249.75	39.91	109.17	2.25	2.83	41.72	81.64	67.72	1.44
	Standard error of cultivar mean	139.17	.72	.81	.28	.28	7.90	4.90	5.54	.27
	Coefficient of variation (%)	12.37	3.63	1.49	24.69	19.45	37.87	12.01	16.35	37.93
	5% LSD Cultivar means (*****=ns)	396.42	2.06	2.32	.79	*****	22.50	*****	15.77	.78

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
61	Cumberland	1.00	116.25	32.75	23.00	18.80	2.25	95.25	39.2	21.5
6960	Suweon 86	1.00	102.75	26.00	27.75	26.60	1.25	96.00	41.7	17.0
58	Williams 79	1.00	127.00	20.50	23.00	19.70	2.50	91.75	41.5	20.1
50	DeSoto	1.00	128.50	28.50	23.75	17.53	2.50	98.00	42.1	18.9
14	Williams	1.00	125.25	26.75	23.75	19.50	2.75	98.25	41.1	21.2
60	Kent	1.00	128.00	26.00	25.75	17.93	2.75	97.50	42.4	17.9
9170	Kwangkyo	1.75	104.00	28.75	26.00	18.25	1.25	100.00	42.5	17.2
59	Will	1.00	130.00	19.50	19.25	17.65	3.00	99.50	41.3	21.3
51	Celest	1.00	122.50	30.25	22.50	19.83	3.25	96.25	40.2	19.6
57	Corsoy 79	1.25	119.50	26.75	22.50	15.55	3.00	53.25	39.2	21.9
54	Chippewa 64	1.00	124.75	23.25	20.00	16.33	4.00	92.75	41.0	21.3
62	York	1.00	119.00	28.50	21.75	17.20	3.00	63.00	39.9	17.6
38	McCall	1.75	117.25	25.00	19.75	16.08	4.50	51.00	40.3	20.9
56	Coles	2.00	119.25	22.75	18.25	15.58	4.25	77.25	41.4	19.8
55	Harlon	2.00	120.25	18.75	22.75	14.53	2.75	62.25	39.1	21.7
36	Evans	1.75	120.25	23.00	20.50	12.88	3.75	62.00	38.8	23.1
	Grand mean	1.28	120.28	25.44	22.52	17.74	2.92	83.38		
	Standard error of cultivar mean	.24	4.82	3.33	1.53	.82	.30	3.55		
	Coefficient of variation (%)	37.59	8.02	26.21	13.56	9.20	20.69	8.51		
	5% LSD Cultivar means (*****=ns)	.69	13.73	*****	4.35	2.32	.86	10.11		

Table 80. Experiment 348, 1981

Country: KOREA
Region: ASIA
Latitude: 37° 17′ N
Longitude: 129° E
Zone: 10
Elevation: 37 m

Site: SUWEON
Cooperator(s): EUN-HI HONG

Date planted: June 11, 1981
Date harvested: October 1981
Fertilizer used (kg/ha): N 32, P 24, K 40
Amount of moisture: 922.27 mm
Substitute cultivar: Jang Yeb-Kong

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
51	Celest	*****	60.75		3.60	2.57	93.75	86.25	81.22	4.25
59	Will	2494.39	39.25	116.25	3.55	2.70	95.00	83.75	52.37	1.50
50	DeSoto	2462.11	40.75	121.00	3.37	2.37	96.25	97.50	84.57	2.50
58	Williams 79	2364.20	40.25	115.25	3.67	2.80	91.25	86.25	69.37	2.25
61	Cumberland	2328.79	42.00	116.25	3.45	2.60	87.50	77.50	64.57	2.00
74	Pella	2271.51	37.25	113.75	3.87	3.12	97.50	93.75	65.22	1.50
35	Crawford	2256.93	49.25	131.75	3.77	3.25	91.25	98.75	81.45	3.00
72	Amcor	2147.05	35.50	112.25	3.32	2.32	93.75	92.50	59.70	2.25
205	Jang Yeb-Kong	2129.87	44.00	117.50	3.07	2.35	100.00	97.50	40.37	1.25
60	Kent	2071.02	45.25	129.00	4.05	3.75	93.75	90.00	73.42	3.00
57	Corsoy 79	1825.23	36.00	102.50	3.55	3.10	92.50	91.25	54.75	2.00
70	Hardin	1604.95	35.50	100.00	3.87	3.30	92.50	85.00	48.70	1.75
73	Century	1599.22	36.00	102.00	3.77	3.20	93.75	85.00	48.05	1.00
55	Harlon	1155.54	32.75	86.75	3.75	3.17	90.00	73.75	39.55	1.00
36	Evans	1130.55	33.00	85.75	3.37	2.65	95.00	88.75	35.72	1.00
38	McCall	735.82	32.00	74.75	3.75	3.10	90.00	80.00	30.92	1.00
	Grand mean	1905.15	39.97	108.32	3.61	2.90	93.36	87.97	58.12	1.95
	Standard error of cultivar mean	128.24	.35	.65	.17	.20	2.58	5.75	2.95	.21
	Coefficient of variation (%)	13.46	1.76	1.21	9.46	13.49	5.52	13.07	10.14	21.35
	5% LSD Cultivar means (*****=ns)	366.00	1.00	1.87	.49	.56	*****	*****	8.39	.59

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
51	Celest	1.00	146.50	32.72	28.00				42.5	16.4
59	Will	1.00	136.25	31.37	14.07	15.30	1.75	99.25	42.8	18.7
50	DeSoto	1.00	126.00	33.17	18.00	15.95	2.25	98.75	43.7	17.8
58	Williams 79	1.00	135.75	33.62	16.62	16.42	2.50	99.00	42.7	19.3
61	Cumberland	1.00	121.25	38.77	15.05	15.67	2.00	98.50	41.6	19.7
74	Pella	1.00	134.00	25.87	14.82	15.70	3.00	96.50	41.0	19.0
35	Crawford	1.00	125.75	27.47	25.67	15.92	2.75	93.25	43.5	17.7
72	Amcor	1.00	128.50	38.97	11.77	12.17	3.50	89.25	39.2	18.2
205	Jang Yeb-Kong	1.00	131.00	18.67	21.77	21.77	1.00	89.00	42.2	17.9
60	Kent	1.00	132.75	23.75	25.52	16.45	3.00	95.25	43.3	18.4
57	Corsoy 79	1.00	153.50	27.87	11.52	11.25	3.50	98.25	41.1	18.9
70	Hardin	1.00	138.75	30.35	10.52	10.22	3.75	90.75	41.5	19.8
73	Century	1.00	147.75	18.77	12.20	13.90	4.00	93.25	42.4	18.8
55	Harlon	1.50	154.00	17.25	10.62	10.72	4.00	87.25	44.8	19.4
36	Evans	1.00	143.50	20.65	9.05	10.67	4.00	84.25	41.8	20.7
38	McCall	1.00	156.00	12.05	10.25	10.72	4.50	85.00	42.9	19.9
	Grand mean	1.03	138.20	26.96	15.97	14.19	3.03	93.17		
	Standard error of cultivar mean	.07	6.06	2.76	.82	.28	.23	2.55		
	Coefficient of variation (%)	14.00	8.78	20.48	10.21	3.97	15.09	5.47		
	5% LSD Cultivar means (*****=ns)	.21	17.27	7.86	2.32	.80	.65	7.27		

Table 81. Experiment 932, 1980

Country: LESOTHO
Region: AFRICA
Latitude: 29° 18′ S
Longitude: 27° 30′ W
Zone: 9
Elevation: 1510 m

Site: MASERU
Cooperator(s): ELIZABETH M. MOFOKA , G. PTEWARI

Date planted: December 31, 1980 Date harvested: April 1981
Fertilizer used (kg/ha): N 20.0, P 25.0, K 25.0
Amount of moisture: 802.6 mm
Number of irrigations: 15 (375 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
60	Kent	1563.23	55.00	107.00	2.00	1.75	10.00	8.75	69.40	1.25
50	DeSoto	1510.30	49.25	107.00	2.00	1.75	8.75	11.25	56.50	1.00
58	Williams 79	1468.21	51.25	111.00	1.75	2.00	11.25	11.25	51.00	1.00
14	Williams	1412.37	53.25	107.00	1.75	1.75	8.75	10.00	52.30	1.00
61	Cumberland	1379.86	50.25	107.00	1.75	1.50	8.75	11.25	50.00	1.00
21	Calland	1350.69	48.50	111.00	1.75	1.25	8.75	11.25	60.40	1.00
59	Will	1265.67	48.00	111.00	2.00	1.25	11.25	11.25	44.10	1.00
32	Columbus	1260.25	55.00	107.00	2.25	2.25	8.75	10.00	63.95	1.00
55	Harlon	1150.65	44.25	101.00	2.00	1.75	8.75	10.00	53.65	1.00
56	Coles	1033.54	44.25	104.00	1.25	1.25	8.75	8.75	50.55	1.00
51	Celest	927.69	57.00	139.00	2.00	2.00	10.00	8.75	61.45	1.00
38	McCall	868.09	41.50	96.25	1.50	2.25	8.75	10.00	44.15	1.00
57	Corsoy 79	853.92	42.75	101.00	1.50	2.00	10.00	6.25	47.30	1.00
36	Evans	778.91	41.00	101.00	1.25	2.00	7.50	11.25	46.20	1.00
54	Chippewa 64	742.23	44.50	104.00	2.00	2.25	7.50	8.75	49.40	1.00
62	York	518.85	69.00	139.00	1.75	2.00	7.50	10.00	68.65	1.00
	Grand mean	1130.28	49.67	109.58	1.78	1.81	9.06	9.92	54.31	1.02
	Standard error of cultivar mean	149.73	.41		.31	.35	1.41	1.50	2.71	.05
	Coefficient of variation (%)	26.49	1.66		34.44	38.36	31.05	30.24	9.99	9.88
	5% LSD Cultivar means (*****=ns)	426.50	1.17		*****	*****	*****	*****	7.73	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
60	Kent	1.75	95.25	40.00	13.43	15.00	2.00	97.00	45.5	13.6
50	DeSoto	1.00	70.50	36.25	6.05	14.75	1.25	95.75	44.2	12.6
58	Williams 79	1.00	68.75	47.00	6.60	14.75	1.00	98.25	45.5	12.6
14	Williams	1.00	52.50	32.75	5.20	13.75	1.00	98.00	45.2	12.5
61	Cumberland	1.00	74.00	40.00	5.10	14.75	2.00	97.75	45.3	14.2
21	Calland	1.25	66.75	37.00	7.80	15.75	2.00	98.25	44.2	15.3
59	Will	1.00	49.75	33.25	6.30	15.00	1.00	98.25	44.5	14.7
32	Columbus	1.50	69.25	41.50	14.93	14.50	1.00	99.00	46.0	13.6
55	Harlon	1.75	66.00	31.25	6.60	16.25	2.25	97.75	43.6	15.7
56	Coles	1.75	66.00	41.00	6.15	15.00	2.25	69.50	46.5	13.4
51	Celest	1.50	75.00	56.25	16.93	12.50	3.00	83.25		
38	McCall	2.00	65.75	32.25	6.48	14.00	2.00	99.00		
57	Corsoy 79	1.25	72.25	30.25	6.08	14.50	2.00	95.00		
36	Evans	2.00	71.50	35.25	4.90	15.50	2.25	97.00		
54	Chippewa 64	1.50	53.50	38.00	6.23	12.25	1.50	99.25		
62	York	1.25	67.75	34.75	15.10	13.00	3.00	82.00		
	Grand mean	1.41	67.78	37.92	8.37	14.45	1.84	94.06		
	Standard error of cultivar mean	.19	11.44	4.19	.94		.15			
	Coefficient of variation (%)	27.67	33.77	22.09	22.37		16.04			
	5% LSD Cultivar means (*****=ns)	.55	*****	11.93	2.67		.42			

Table 82. Experiment 718, 1980

Country: LIBERIA
Region: AFRICA
Latitude: 6° 58′ N
Longitude: 9° 30′ W
Zone: 1
Elevation: 164 m

Site: SUAKOKO: BONG COUNTY
Cooperator(s): WILSON K. EMAANZI

Date planted: July 30, 1980
Date harvested: October 1980
Soil type: suakoko fine sandy loam, pH 4.6
Fertilizer used (kg/ha): N 25, P 26.2, K 25
Amount of moisture: 976.12 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
44	Foster	1123.56	30.00	77.00	2.50	2.25	66.75	60.00	23.25	1.00
2	UFV-1	1007.45	34.00	86.00	2.50	1.75	62.63	71.25	36.25	1.00
14	Williams	801.20	24.00	82.25	2.50	2.50	69.00	78.75	28.25	1.00
41	UFV-1 (BP-2)	782.03	37.00	90.25	2.00	1.75	56.63	77.50	41.75	1.00
8	ICA Caribe	757.07	39.00	102.00	2.00	1.25	79.75	72.50	59.75	1.00
63	Hutton	748.27	24.00	84.75	3.50	1.50	57.88	72.50	29.00	1.00
9	Jupiter	693.06	37.00	92.50	3.25	2.25	65.50	78.75	44.75	1.00
43	Alamo	681.97	39.00	94.00	4.00	2.00	69.50	77.50	37.00	1.00
39	IGH 23	655.96	39.00	95.00	3.50	2.50	66.13	95.00	54.25	1.00
7	ICA Tunia	651.59	34.00	87.50	4.00	3.00	71.00	72.50	34.25	1.00
37	G 2120	612.58	54.00	93.00	3.50	2.25	92.50	56.25	49.00	2.00
10	Improved Pelican	597.49	37.00	84.50	4.00	2.50	76.38	78.75	40.50	1.00
19	Davis	562.40	30.00	83.75	3.00	2.50	70.13	82.50	28.00	1.00
45	ICA L-109	530.73	39.00	99.75	2.50	1.75	70.75	85.00	38.25	1.00
3	SJ-2	293.39	35.00	87.50	3.50	3.00	79.75	77.50	46.75	1.00
	Grand mean	699.92	35.47	89.32	3.08	2.18	70.28	75.75	39.40	1.07
	Standard error of cultivar mean	198.44		2.64	.39	.44	4.84	6.78	4.23	
	Coefficient of variation (%)	56.70		5.92	25.07	40.76	13.78	17.91	21.48	
	5% LSD Cultivar means (*****=ns)	*****		7.54	1.10	*****	13.82	*****	12.07	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
44	Foster	1.00	113.00	9.00	9.25	18.43	2.75		42.7	21.9
2	UFV-1	1.00	161.50	12.75	10.00	15.35	2.50		47.6	20.7
14	Williams	1.00	101.25	10.75	10.25	19.53	2.25		45.1	22.6
41	UFV-1 (BP-2)	1.00	111.50	11.50	9.00	17.63	2.75		45.7	21.8
8	ICA Caribe	2.00	176.00	19.25	15.00	16.58	2.75		50.1	18.0
63	Hutton	1.00	94.00	9.50	9.00	20.98	2.50		46.0	20.8
9	Jupiter	1.00	138.75	12.75	10.75	19.53	3.25		46.6	20.4
43	Alamo	1.00	171.75	13.75	14.25	17.65	3.00		46.5	21.0
39	IGH 23	3.00	178.00	12.75	16.75	17.68	2.75		47.5	20.2
7	ICA Tunia	1.00	128.50	13.00	8.25	20.80	2.50		44.8	21.0
37	G 2120	3.00	231.50	10.50	16.50	12.88	3.50		48.6	16.3
10	Improved Pelican	3.00	145.00	15.50	9.50	16.80	3.25		45.9	22.0
19	Davis	1.00	96.75	9.75	8.75	16.70	2.00		43.7	24.0
45	ICA L-109	1.00	135.00	12.75	8.25	16.85	3.25		47.9	19.5
3	SJ-2	1.00	166.50	10.25	11.50	17.40	3.00		45.4	19.6
	Grand mean	1.47	143.27	12.25	11.13	17.65	2.80			
	Standard error of cultivar mean		21.93	2.74	1.70	1.78	.38			
	Coefficient of variation (%)		30.61	44.66	30.51	20.13	27.37			
	5% LSD Cultivar means (*****=ns)		62.59	*****	4.85	*****	*****			

Table 83. Experiment 160, 1981

Country: LIBERIA
Region: AFRICA
Latitude: 6° 58′ N
Longitude: 9° 30′ W
Zone: 1
Elevation: 162.4 m

Site: SUAKOKO, BONG COUNTY
Cooperator(s): WILSON K. EMAANZI

Date planted: July 30, 1981
Date harvested: October 1981
Soil type: pH 5.4, OM 0.66%, N 0.3%, P 0.7 ppm, K 17.0 ppm
Fertilizer used (kg/ha): N 25.0, P 25.0, K 25.0

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
9	Jupiter	918.39	38.75	88.00	4.25	3.00	88.75	58.75	49.50	1.00
39	IGH 23	561.11	39.00	93.00	4.00	3.00	93.75	63.75	45.25	1.00
46	Ecuador 2	392.00	32.00	80.00	4.25	3.50	98.75	81.25	37.50	1.00
3	SJ-2	376.12	37.00	73.00	4.25	3.00	76.25	60.00	47.00	1.00
10	Improved Pelican	329.52	38.00	71.00	4.25	3.00	83.75	77.50	38.00	1.00
2	UFV-1	317.40	33.00	79.00	4.25	4.00	92.50	57.50	34.50	1.00
7	ICA Tunia	314.27	29.00	81.00	4.25	3.00	97.50	67.50	44.75	1.00
40	IGH 24	300.52	41.00	93.00	4.00	3.50	97.50	72.50	44.00	1.00
41	UFV-1 (BP-2)	289.10	29.00	81.00	4.25	3.00	87.50	72.50	44.50	1.00
8	ICA Caribe	272.85	35.00	100.00	3.50	2.00	93.75	76.25	48.50	2.75
58	Williams 79	238.13	25.25	69.00	4.00	3.50	91.25	82.50	33.25	1.00
13	Bossier	232.21	24.00	71.00	4.00	3.00	91.25	86.25	29.00	1.00
43	Alamo	226.09	38.00	80.00	4.75	4.00	90.00	56.25	34.50	1.00
44	Foster	217.75	24.00	71.00	3.75	4.00	91.25	71.25	25.75	1.00
37	G 2120	203.29	43.50	83.00	4.00	2.50	93.75	75.00	44.50	1.00
19	Davis	124.90	29.00	71.00	4.50	3.00	96.25	91.25	26.00	1.00
	Grand mean	332.10	33.47	80.25	4.14	3.19	91.48	71.87	39.16	1.11
	Standard error of cultivar mean	170.50	.72	0.00	.26	.39	6.51	6.57	2.79	.06
	Coefficient of variation (%)	102.68	4.31	0.00	12.70	24.19	14.23	18.28	14.24	11.27
	5% LSD Cultivar means (*****=ns)	*****	2.05	0.00	*****	1.10	*****	18.71	7.94	.18

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
9	Jupiter	1.00	89.00	11.50	17.75	17.52	3.50	70.00	45.5	20.3
39	IGH 23	1.00	78.00	16.00	14.75	16.57	3.00	80.00	46.7	19.0
46	Ecuador 2	1.00	99.00	11.00	13.75	16.92	3.00	40.00	44.4	21.6
3	SJ-2	1.00	134.00	17.50	12.25	12.65	1.50	90.00	43.0	21.0
10	Improved Pelican	5.00*	108.25	9.25	12.25	12.60	1.75	70.00		
2	UFV-1	1.00	91.50	11.25	10.00	13.35	1.75	30.00	46.0	20.4
7	ICA Tunia	1.00	112.75	13.00	10.00	18.12	2.25	100.00	44.4	21.2
40	IGH 24	1.00	89.75	18.75	13.00	15.02	2.50	30.00	44.6	21.9
41	UFV-1 (BP-2)	1.00	91.50	12.25	12.50	13.80	2.00	100.00	44.4	20.7
8	ICA Caribe	1.00	91.50	11.75	12.75	16.20	2.00	80.00	49.2	16.9
58	Williams 79	1.00	74.25	8.00	9.25	16.92	2.00	80.00	45.9	20.2
13	Bossier	1.00	101.00	13.00	7.25	15.05	2.00	30.00	45.4	20.5
43	Alamo	1.00	83.00	12.50	10.50	13.62	2.50	60.00	45.6	19.6
44	Foster	1.00	82.00	8.50	9.25	12.80	2.25	80.00	43.1	21.1
37	G 2120	1.00	101.25	16.75	14.75	8.32	2.00	80.00	45.8	16.7
19	Davis	1.00	71.75	9.25	7.50	13.07	1.50	10.00		
	Grand mean	1.25	93.66	12.52	11.72	14.54	2.22	64.37		
	Standard error of cultivar mean	0.00	12.74	2.54	.78	.64	.35	0.00		
	Coefficient of variation (%)	0.00	27.21	40.55	13.31	8.81	31.29	0.00		
	5% LSD Cultivar means (*****=ns)	0.00	*****	*****	2.22	1.82	.99	0.00		

Table 84. Experiment 800, 1980

Country: LIBYA
Region: AFRICA
Latitude: 32° 11′ N
Longitude: 13° 17′ E
Zone: 10
Elevation: 11 m

Site: TAJOURA EXPERIMENT STATION
Cooperator(s): KHALIFA DAHNOUS, ABUBAKER MADDUR, JOHN ASHLEY

Date planted: May 10, 1980
Date harvested: September 1980
Soil type: sand 74.0%, silt 10.0%, clay 7.0%, pH 7.8
Fertilizer used (kg/ha): N 25, P 25, K 25
Amount of moisture: 897.5 mm
Number of irrigations: 22 (792 mm)
Substitute cultivar: Davis

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
14	Williams	3625.72	39.75	116.00	4.00	3.00	100.00	96.25	77.75	1.00
32	Columbus	3542.37	41.25	119.50	3.50	1.25	100.00	100.00	110.25	1.50
53	Ware	2729.71	42.00	117.25	3.25	1.50	100.00	98.75	53.75	1.00
50	DeSoto	2600.52	37.50	110.50	4.00	2.00	100.00	100.00	82.50	1.25
48	Gail	2362.97	61.00	131.00	4.00	1.00	100.00	95.00	77.25	1.00
52	Bay	2292.12	62.25	134.75	3.75	3.75	100.00	95.00	93.75	1.00
19	Davis	2196.27	76.50	149.00	3.50	3.25	98.75	91.25	122.25	2.00
18	Forrest	2021.24	62.00	134.75	4.00	2.75	100.00	97.50	82.75	1.25
19	Davis	1762.85	78.75	148.50	4.00	2.00	97.50	78.75	130.50	2.25
49	Centennial	1558.64	70.75	145.50	3.75	3.25	98.75	88.75	120.50	1.50
13	Bossier	1471.13	77.00	153.00	4.00	3.00	98.75	90.00	122.50	2.25
47	PK-73-94	983.53	85.25	155.50	4.25	4.00	75.00	90.00	113.50	1.00
44	Foster	933.52	86.50	152.50	4.00	2.75	100.00	90.00	104.25	2.50
	Grand mean	2160.05	63.12	135.98	3.85	2.58	97.60	93.17	99.35	1.50
	Standard error of cultivar mean	382.01	.43	1.07	.19	.18	7.04	3.71	6.65	.33
	Coefficient of variation (%)	35.37	1.36	1.57	9.69	14.18	14.43	7.97	13.40	43.91
	5% LSD Cultivar means (*****=ns)	1095.69	1.23	3.07	.53	.52	*****	10.64	19.09	.94

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
14	Williams	1.00	209.00	29.25	7.75	17.83	1.00	92.50	39.7	21.9
32	Columbus	1.00	192.75	36.75	11.25	16.55	2.00	93.50	40.9	20.4
53	Ware	1.00	193.75	36.00	11.25	16.70	1.00	88.75	39.0	21.3
50	DeSoto	1.00	194.00	30.25	7.75	15.10	2.00	82.00	38.6	21.3
48	Gail	1.00	189.50	31.25	16.25	16.58	1.00	94.50	40.7	19.2
52	Bay	1.00	201.75	21.25	20.00	15.53	2.00	92.25	39.9	19.7
19	Davis	1.00	208.50	32.25	17.25	16.48	3.00	75.00	43.3	20.6
18	Forrest	1.00	192.50	31.50	17.75	10.98	1.00	90.00	44.2	17.9
19	Davis	1.00	210.75	31.25	18.75	15.18	3.00	88.25	41.4	17.4
49	Centennial	1.00	206.75	39.00	20.50	13.65	1.00	91.75	41.3	17.5
13	Bossier	1.00	191.50	38.25	15.50	12.70	4.00	81.25	38.5	19.0
47	PK-73-94	1.00	172.50	58.75	22.25	11.18	3.00	81.00	44.2	16.3
44	Foster	1.00	195.50	34.00	20.25	11.90	4.00	71.25	44.2	17.8
	Grand mean	1.00	196.83	34.60	15.88	14.64	2.15	86.31		
	Standard error of cultivar mean		7.84	5.52	1.70	.64		4.92		
	Coefficient of variation (%)		7.97	31.93	21.35	8.78		11.40		
	5% LSD Cultivar means (*****=ns)		*****	15.84	4.86	1.84		14.11		

Table 85. Experiment 905, 1980

Country: LIBYA
Region: AFRICA
Latitude: 32° 11′ N
Longitude: 13° 17′ E
Zone: 10
Elevation: 11 m

Site: TAJOURA EXPERIMENT STATION
Cooperator(s): KHALIFA DAHNOUS, ABUBAKER MADDUR, JOHN ASHLEY

Date planted: May 7, 1980
Date harvested: August 1980
Soil type: sand 74.4%, silt 9.5%, clay 7%, pH 7.8
Fertilizer used (kg/ha): N 25, P 25, K 25
Amount of moisture: 713 mm
Number of irrigations: 19 (684 mm)
Substitute cultivar: Davis

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
60	Kent	3642.39	40.25	119.25	4.00	2.00	97.50	95.00	73.25	1.00
21	Calland	3213.14	33.25	107.50	4.00	3.00	100.00	98.75	66.25	1.00
59	Will	2838.07	38.00	108.25	4.00	3.25	98.75	96.25	45.25	1.00
50	DeSoto	2792.22	37.25	108.00	4.25	3.50	75.00	97.50	71.50	1.00
56	Coles	2792.22	38.50	96.75	4.00	2.75	100.00	95.00	52.75	1.00
61	Cumberland	2771.39	36.50	106.75	3.50	2.75	100.00	96.25	55.25	1.00
52	Bay	2763.05	61.25	129.50	4.25	2.00	75.00	95.00	101.00	1.00
62	York	2608.85	60.75	128.00	4.00	2.00	100.00	93.75	87.25	1.00
14	Williams	2271.29	37.50	108.75	3.75	2.75	100.00	97.50	63.00	1.00
58	Williams 79	2271.29	37.75	108.25	3.75	2.25	100.00	97.50	55.50	1.00
36	Evans	2087.92	31.75	94.50	3.75	2.75	100.00	96.25	28.00	1.00
55	Harlon	2037.91	34.00	90.00	4.00	3.00	98.75	92.50	39.50	1.00
57	Corsoy 79	1962.89	33.50	92.00	4.00	3.00	100.00	95.00	55.50	1.00
54	Chippewa 64	1937.89	33.00	92.75	4.00	3.25	100.00	97.50	48.00	1.00
38	McCall	1658.66	34.00	88.25	4.00	3.00	100.00	98.75	27.75	1.00
19	Davis	1183.57	63.50	135.00	4.00	2.00	100.00	95.00	103.25	1.00
	Grand mean	2427.05	40.67	107.09	3.95	2.70	96.56	96.09	60.81	1.00
	Standard error of cultivar mean	340.07	2.11	2.42	.16	.31	8.93	1.35	3.44	
	Coefficient of variation (%)	28.02	10.39	4.52	8.07	22.62	18.50	2.82	11.30	
	5% LSD Cultivar means (*****=ns)	968.66	6.02	6.90	*****	.87	*****	*****	9.79	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
60	Kent	1.00	220.50	34.25	4.25	16.83	2.00	93.75	40.1	19.3
21	Calland	1.00	205.75	33.25	3.25	18.73	2.00	90.75	38.6	21.7
59	Will	1.00	207.00	21.75	3.75	15.58	1.00	96.50	39.3	22.2
50	DeSoto	1.00	225.50	27.25	2.75	16.33	1.00	95.00	37.1	22.8
56	Coles	1.00	232.50	17.75	4.00	18.85	3.00	84.50	38.1	21.5
61	Cumberland	1.00	205.25	35.00	3.50	16.50	1.00	94.00	38.2	24.2
52	Bay	1.00	213.00	30.25	6.00	15.40	1.00	97.25	40.4	18.2
62	York	1.00	212.75	38.00	5.25	15.35	1.00	95.50	37.8	20.5
14	Williams	1.00	228.00	20.50	3.75	14.98	1.00	95.00	39.7	21.3
58	Williams 79	1.00	205.75	23.75	3.00	15.35	1.00	93.75	39.7	22.2
36	Evans	1.00	228.75	25.25	2.00	16.75	2.00	94.50	38.3	23.7
55	Harlon	1.00	238.75	15.75	3.00	17.65	1.00	97.00	37.2	22.1
57	Corsoy 79	1.00	234.75	16.00	2.50	15.85	1.00	93.25	37.4	23.4
54	Chippewa 64	1.00	249.50	21.50	3.75	15.70	1.00	92.50	40.1	19.8
38	McCall	1.00	217.00	13.50	2.00	15.48	1.00	97.25	36.0	23.3
19	Davis	1.00	213.00	21.50	5.25	13.10	2.00	88.75	43.4	17.8
	Grand mean	1.00	221.11	24.70	3.63	16.15	1.38	93.70		
	Standard error of cultivar mean		11.15	3.68	.36	.83		2.15		
	Coefficient of variation (%)		10.08	29.80	19.99	10.34		4.59		
	5% LSD Cultivar means (*****=ns)		*****	10.48	1.03	2.38		6.12		

Table 86. Experiment 765, 1980

Country: MADAGASCAR
Region: AFRICA
Latitude: 19° 26′ S
Longitude: 46° 20′ E
Zone: 5
Elevation: 900 m

Site: MANDOTO, AMPARIHY
Cooperator(s): R. RAVOAVY

Date planted: December 11, 1980
Date harvested: April 1981
Soil type: sand 44%, silt 8%, clay 42%
Fertilizer used (kg/ha): N 25.0, P 35.0, K 66.07
Amount of moisture: 2005.5 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
41	UFV-1 (BP-2)	1921.22	55.00	137.75					62.50	1.00
19	Davis	1810.78	61.00	137.25					70.00	1.00
7	ICA Tunia	1569.06	55.50	136.75					66.25	1.00
8	ICA Caribe	1464.88	49.00	129.00					48.75	1.00
43	Alamo	1454.46	57.75	133.25					70.00	1.00
14	Williams	1396.11	41.00	118.50					40.00	1.00
40	IGH 24	1389.86	45.75	130.25					47.50	1.00
3	SJ-2	1375.27	53.25	129.75					50.00	1.00
39	IGH 23	1366.94	56.00	137.75					61.25	1.00
37	G 2120	1366.94	48.00	129.00					56.25	1.25
44	Foster	1298.18	54.25	137.50					56.25	1.00
9	Jupiter	1283.59	56.00	138.75					55.00	1.25
2	UFV-1	1016.87	56.25	129.50					60.00	1.00
13	Bossier	931.44	49.50	133.50					46.25	1.00
16	Cobb	792.66	45.00	212.75					43.75	1.25
	Grand mean	1362.55	52.22	138.08					55.58	1.05
	Standard error of cultivar mean	230.59	7.39	20.15					9.56	.11
	Coefficient of variation (%)	33.85	28.29	29.18					34.41	21.80
	5% LSD Cultivar means (*****=ns)	*****	*****	*****					*****	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
41	UFV-1 (BP-2)	1.00	188.75	89.50	10.00	14.75	2.25	80.50	35.2	24.2
19	Davis	1.00	212.75	192.00	11.25	13.75	1.75	79.50	40.2	22.0
7	ICA Tunia	1.00	219.75	71.25	10.00	14.75	1.75	79.50	39.0	23.8
8	ICA Caribe	1.00	222.50	42.00	6.25	14.00	2.00	78.75	41.4	21.8
43	Alamo	1.00	216.75	70.50	10.00	12.00	2.00	79.50	38.5	23.7
14	Williams	1.00	203.25	42.00	5.50	15.75	1.50	77.50	43.4	21.0
40	IGH 24	1.00	151.50	78.50	7.50	15.25	2.00	77.50		
3	SJ-2	1.00	190.50	55.25	8.25	13.75	2.00	80.25	38.5	22.8
39	IGH 23	1.00	205.75	85.75	8.75	14.25	2.00	79.25	40.0	22.1
37	G 2120	1.25	223.00	77.75	7.50	13.50	2.00	80.50	42.7	18.2
44	Foster	1.00	204.00	82.75	11.25	13.50	2.00	80.25	40.4	22.9
9	Jupiter	1.25	145.25	105.00	7.50	14.25	1.75	79.25	39.4	25.4
2	UFV-1	1.00	191.50	81.00	9.00	12.75	2.00	81.00	40.1	23.0
13	Bossier	1.00	156.75	96.50	5.00	13.75	2.25	80.00	41.3	22.0
16	Cobb	1.25	182.00	63.25	5.00	15.75	2.00	79.50		
	Grand mean	1.05	194.27	82.20	8.18	14.12	1.95	79.52		
	Standard error of cultivar mean	.11	26.52	34.45	1.85	1.48	.22	1.32		
	Coefficient of variation (%)	21.80	27.30	83.82	45.25	20.96	22.80	3.33		
	5% LSD Cultivar means (*****=ns)	*****	*****	*****	*****	*****	*****	*****		

Table 87. Experiment 166, 1981

Country: MADAGASCAR
Region: AFRICA
Latitude: 19° 47′ S
Longitude: 46° 11′ E
Zone: 5
Elevation: 900 m

Site: MANDOTO, AMPARIHY
Cooperator(s): RICHARD RANDRIAMAHOLY

Date planted: December 15, 1981 Date harvested: March 1982
Soil type: sand 43.2%, silt 13.6%, clay 43.2%, pH 5.1
Fertilizer used (kg/ha): N 25.0, P 35.2, K 66.4
Amount of moisture: 1477 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
8	ICA Caribe	3076.89	64.25	148.00	1.00	1.00	56.25	67.50	33.62	1.00
39	IGH 23	3009.21	63.25	148.00	1.00	1.00	41.25	80.00	37.45	1.75
43	Alamo	2767.64	65.00	141.75	1.00	1.00	50.00	82.50	26.42	1.00
7	ICA Tunia	2642.69	48.00	123.00	1.00	1.00	40.00	67.50	22.05	1.00
2	UFV-1	2516.70	48.00	148.00	1.00	1.00	50.00	78.75	17.10	1.00
37	G 2120	2369.88	66.25	114.75 ,	1.00	1.00	65.00	75.00	36.70	4.50
41	UFV-1 (BP-2)	2309.49	48.00	141.75	1.00	1.00	48.75	73.75	25.67	1.00
10	Improved Pelican	2291.79	57.75	115.25	1.00	1.00	58.75	73.75	22.70	1.00
44	Foster	1744.09	32.00	115.50	1.00	1.00	51.25	80.00	16.82	1.00
3	SJ-2	1684.74	55.50	135.50	1.00 (2)	1.00 (2)	45.00 (2)	77.50 (2)	21.72	1.00
19	Davis	1286.98	48.00	123.00	1.00	1.00	35.00	68.75	11.17	1.00
40	IGH 24	1275.53	80.25	148.00					19.32	1.00
13	Bossier	1041.25	38.50	115.25	1.00	1.00	52.50	77.50	14.52	1.00
9	Jupiter	836.12	60.00	148.00					20.67	1.00
58	Williams 79	696.94 (3)	32.00	95.50	1.00	1.00	42.50	68.75	12.65	1.00
46	Ecuador 2	584.14	55.50	148.00					14.55	1.00
	Grand mean	1902.21	53.89	131.83	1.00	1.00	49.10	74.60	22.07	1.27
	Standard error of cultivar mean	969.31	2.10	4.86	0.00	0.00	15.04	12.41	5.13	.14
	Coefficient of variation (%)	50.96	7.80	7.38	0.00	0.00	30.63	16.63	46.50	21.89
	5% LSD Cultivar means (*****=ns)	*****	5.99	13.85	0.00	0.00	*****	*****	14.62	.39

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
8	ICA Caribe	1.75	212.75	168.65	57.00	14.00	2.00		46.1	21.6
39	IGH 23	2.25	132.25	138.70	84.55	17.50	2.00		45.3	22.4
43	Alamo	1.75	148.00	117.85	56.00	17.00	2.75		40.4	21.5
7	ICA Tunia	1.00	189.00	86.30	39.27	21.25	2.00		40.4	21.3
2	UFV-1	2.00	193.75	141.70	49.92	17.00	2.00		40.5	20.8
37	G 2120	1.25	281.25	98.70	74.25	6.75	2.50		45.1	19.5
41	UFV-1 (BP-2)	1.75	131.50	161.70	57.82	15.50	2.25		39.6	21.8
10	Improved Pelican	1.00	141.00	88.25	60.52	15.75	2.25		40.9	21.3
44	Foster	1.00	270.00	61.90	29.90	19.50	2.00		40.8	21.2
3	SJ-2	1.50	49.00	113.80	56.40	16.25	2.00		40.8	20.7
19	Davis	2.25	133.00	107.80	30.75	20.25	2.50		41.1	21.0
40	IGH 24	1.25	18.00	199.80 (1)	39.50	17.75	2.25		37.7	22.2
13	Bossier	2.00	72.75	88.90	26.47	20.25	2.00		43.2	20.0
9	Jupiter	2.50	12.00	198.30 (2)	40.60	22.75	1.75		40.8	21.4
58	Williams 79	1.00	64.50	73.00	30.35	23.00 (3)	2.33 (3)		40.2	21.6
46	Ecuador 2	3.00	10.00	176.00 (1)	38.75	21.25	1.75		42.6	20.5
	Grand mean	1.70	128.67	117.17	48.25	17.78	2.14			
	Standard error of cultivar mean	.26	31.36	51.71	9.94	4.33	.62			
	Coefficient of variation (%)	30.58	48.74	44.14	41.19	24.38	28.86			
	5% LSD Cultivar means (*****=ns)	.74	89.32	*****	28.31	*****	*****			

Table 88. Experiment 167, 1981

Country: MADAGASCAR
Region: AFRICA
Latitude: 19° 38′ S
Longitude: 46° 30′ E
Zone: 5
Elevation: 00 m

Site: MANDOTO, AMPARIHY
Cooperator(s): RICHARD RANDRIAMAHOLY

Date planted: December 1981
Date harvested: March 1982
Soil type: sand 43.7%, silt 15.8%, clay 40.7%, pH 5.18, oxic dystropets
Fertilizer used (kg/ha): N 25.0, P 35.2, K 66.4

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodgin
9	Jupiter	1785.74								1.00
39	IGH 23	1731.60								1.00
46	Ecuador 2	1676.41								1.00
43	Alamo	1667.04								1.00
8	ICA Caribe	1621.23								1.00
41	UFV-1 (BP-2)	1603.52								1.00
16	Cobb	1551.25								1.00
3	SJ-2	1504.61								1.00
10	Improved Pelican	1484.82								1.00
13	Bossier	1448.38								1.00
2	UFV-1	1417.14								1.00
40	IGH 24	1417.14								1.00
37	G 2120	1336.96								4.50
44	Foster	1205.77								1.00
19	Davis	1155.79								1.00
58	Williams 79	906.93								1.00
	Grand mean	1469.65								1.22
	Standard error of cultivar mean	215.27								.07
	Coefficient of variation (%)	29.30								11.84
	5% LSD Cultivar means (*****=ns)	*****								.21

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percen Oil
9	Jupiter	2.00	286.25	49.55		15.75	2.50		39.7	21.9
39	IGH 23	1.75	258.00	37.75		14.25	2.25		39.5	21.8
46	Ecuador 2	1.00	269.50	32.95		14.50	2.75		40.9	21.0
43	Alamo	1.50	271.00	41.40		14.25	2.25		40.7	21.7
8	ICA Caribe	1.50	333.75	58.00		11.25	3.25		39.8	21.7
41	UFV-1 (BP-2)	1.25	300.75	30.50		14.00	1.75		40.0	21.6
16	Cobb	1.50	279.25	36.20		15.75	2.50		40.1	21.1
3	SJ-2	1.50	294.25	40.30		12.25	2.00		42.1	21.1
10	Improved Pelican	1.75	318.50	28.65		12.50	2.25		38.5	22.0
13	Bossier	1.25	273.00	35.95		16.75	2.00		44.1	23.4
2	UFV-1	1.50	315.75	39.35		14.50	1.75		40.4	21.7
40	IGH 24	1.25	280.00	36.90		12.50	1.75		38.6	23.2
37	G 2120	1.50	270.25	49.75		5.25	2.25		41.3	21.1
44	Foster	1.25	264.25	59.05		15.75	2.25		40.9	21.0
19	Davis	1.25	318.00	38.90		17.00	2.25		39.8	21.6
58	Williams 79	1.00	324.25	42.45		16.50 (2)	2.00		39.4	21.2
	Grand mean	1.42	291.05	41.10		13.84	2.23			
	Standard error of cultivar mean	.25	30.72	8.43		3.06	.33			
	Coefficient of variation (%)	35.09	21.11	41.04		22.10	29.61			
	5% LSD Cultivar means (*****=ns)	*****	*****	*****		*****	*****			

Table 89. Experiment 227, 1981

Country: MADAGASCAR
Region: AFRICA
Latitude: 19° 38′ S
Longitude: 46° 30′ E
Zone: 5
Elevation: 900 m

Site: MANDOTO, AMPARIHY
Cooperator(s): RICHARD RANDRIAMAHOLY

Date planted: December 15, 1981 Date harvested: March 1982
Soil type: sand 43.2%, silt 15.8%, clay 40.7%, OM 1.2%, pH 5.1, oxic dystropets
Fertilizer used (kg/ha): N 25.0, P 35.2, K 66.4

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
2	UFV-1	2455.27								1.75
75	Braxton	2068.96								1.00
48	Gail	1993.99								1.00
47	PK-73-94	1888.83								1.00
43	Alamo	1848.22								1.00
49	Centennial	1778.45								1.00
10	Improved Pelican	1731.60								1.00
35	Crawford	1676.20								1.00
19	Davis	1622.48								1.00
50	DeSoto	1572.29								1.00
69	Essex	1515.02								1.00
44	Foster	1432.76								1.00
52	Bay	1225.55								1.00
51	Celest	1204.73								1.00
58	Williams 79	1063.12								1.00
53	Ware	915.26								1.00
	Grand mean	1624.55								1.05
	Standard error of cultivar mean	186.35								.06
	Coefficient of variation (%)	22.94								11.94
	5% LSD Cultivar means (*****=ns)	530.82								.18

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
2	UFV-1	1.75	359.25	87.40			2.00		39.6	21.3
75	Braxton	1.75	321.25	54.55			2.00		39.4	21.4
48	Gail	1.75	322.75	49.60			2.00		41.7	22.8
47	PK-73-94	1.75	309.00	31.45			2.50		35.5	22.7
43	Alamo	1.25	336.75	46.80			2.25		38.0	22.0
49	Centennial	1.50	311.75	32.20			2.50		42.0	20.5
10	Improved Pelican	1.75	245.00	58.90			2.25		40.3	21.3
35	Crawford	1.75	372.00	72.35			2.00		41.0	20.8
19	Davis	2.00	321.75	30.25			2.75		38.0	21.7
50	DeSoto	1.50	327.50	46.80			2.00		40.2	21.2
69	Essex	1.75	336.25	51.85			2.25		40.7	20.9
44	Foster	2.00	328.00	51.30			2.50		38.1	22.0
52	Bay	2.00	326.75	46.80			2.00		35.2	23.9
51	Celest	2.00	367.00	38.05			2.00		39.8	20.6
58	Williams 79	1.75	297.25	37.40			2.50		43.5	19.9
53	Ware	1.25	304.25	43.95			2.50		40.8	22.7
	Grand mean	1.72	324.16	48.73			2.25			
	Standard error of cultivar mean	.22	49.71	13.87			.25			
	Coefficient of variation (%)	25.93	30.67	56.95			22.59			
	5% LSD Cultivar means (*****=ns)	*****	*****	*****			*****			

Table 90. Experiment 228, 1981

Country: MADAGASCAR
Region: AFRICA
Latitude: 19° 47′ S
Longitude: 46° 11′ E
Zone: 5
Elevation: 900 m

Site: MANDOTO, AMPARIHY
Cooperator(s): RICHARD RANDRIAMAHOLY

Date planted: December 16, 1981 Date harvested: March 1982
Soil type: sand 43.2%, silt 13.6%, clay 43.2%, pH 5.1, eutric ustic dystropets
Fertilizer used (kg/ha): N 25.0, P35.2, K 66.4
Amount of moisture: 1477 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodgin
43	Alamo	2748.90	59.00	137.00	1.25	1.00	40.00	76.25	60.25	
47	PK-73-94	2264.72	43.50	120.50	2.00	1.00	48.75	70.00	43.75	
2	UFV-1	2215.78	45.75	127.00	1.00	1.00	57.50	82.50	53.25	
10	Improved Pelican	2088.75	53.00	124.50	1.25	1.00	47.50	72.50	56.00	
51	Celest	1570.20	38.75	98.00	1.25	1.00	40.00	65.00	35.50	
44	Foster	1478.57	40.00	102.25	1.00	1.00	58.75	76.25	39.50	
75	Braxton	1414.02	40.00	102.00	1.00	1.00	46.25	82.50	37.25	
49	Centennial	1291.15	40.00	96.25	1.00	1.00	68.75	78.75	31.00	
19	Davis	1273.45	41.00	127.25	1.50	1.00	40.00	76.25	33.25	
69	Essex	1201.60	40.00	102.25	1.00	1.00	47.50	73.75	34.00	
35	Crawford	1195.35	33.25	94.75	1.00	1.00	46.25	82.50	38.75	
52	Bay	1175.57	40.00	99.25	1.25	1.00	40.00	73.75	34.50	
48	Gail	1172.45	40.00	106.25	1.25	1.00	40.00	75.00	35.00	
58	Williams 79	952.33	31.00	91.50	1.00	1.00	68.75	88.75	32.25	
50	DeSoto	929.84	31.00	91.50	1.00	1.00	51.25	71.25	33.25	
53	Ware	867.36	31.00	90.00	1.75	1.00	32.50	47.50	29.00	
	Grand mean	1490.00	40.45	106.89	1.22	1.00	48.36	74.53	39.16	
	Standard error of cultivar mean	249.56	1.65	3.63	.31	0.00	5.90	6.87	2.83	
	Coefficient of variation (%)	33.50	8.17	6.79	50.89	0.00	24.39	18.43	14.47	
	5% LSD Cultivar means (*****=ns)	710.86	4.71	10.34	*****	0.00	16.80	*****	8.07	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percen Oil
43	Alamo		218.25	69.65	6.30	15.50	2.50		39.7	21.9
47	PK-73-94		293.25	67.15	4.95	16.75	2.50		39.5	21.8
2	UFV-1		228.50	97.80	7.40	17.75	2.25		40.9	21.0
10	Improved Pelican		261.00	59.30	8.70	15.25	2.50		40.7	21.7
51	Celest		164.50	61.35	10.42	20.75	2.50		39.8	21.7
44	Foster		211.50	42.00	8.55	17.75	2.50		40.0	21.6
75	Braxton		202.50	37.45	7.22	21.00	2.25		40.1	21.1
49	Centennial		173.50	32.05	7.55	17.75	2.25		42.1	21.1
19	Davis		101.00	88.25	5.82	18.75	2.00		38.5	22.0
69	Essex		279.75	36.45	9.62	18.00	2.25		44.1	23.4
35	Crawford		100.25	68.75	6.67	19.25	2.00		40.4	20.7
52	Bay		164.00	50.05	7.85	21.50	2.25		38.6	23.2
48	Gail		140.25	52.15	6.02	19.50	2.25		41.3	21.1
58	Williams 79		177.50	38.65	9.37	23.00 (3)	2.50		40.9	21.0
50	DeSoto		157.25	42.95	6.67	20.75	2.25		39.8	21.6
53	Ware		234.00	30.35	8.65	21.25	2.25		39.4	21.2
	Grand mean		194.19	54.65	7.61	18.97	2.31			
	Standard error of cultivar mean		23.07	11.40	1.26	2.82	.28			
	Coefficient of variation (%)		23.76	41.73	33.07	14.88	24.44			
	5% LSD Cultivar means (*****=ns)		65.72	32.48	*****	*****	*****			

Table 91. Experiment 717, 1980

Country: MALAYSIA
Region: ASIA
Latitude: 3° 12′ N
Longitude: 101° 35′ E
Zone: 1
Elevation: 30 m

Site: SUNGAI BULOH, SELANGOR
Cooperator(s): NG KIM FOH

Date planted: May 27, 1980
Date harvested: September 1980
Soil type: sand 84%, silt 5%, clay 11%, pH 5.1 sandy loam
Fertilizer used (kg/ha): N 25, P 26.4 K 24.9
Amount of moisture: 427.5 mm
Substitute cultivar: Palmetto

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
2	UFV-1	1833.70	34.75	62.00	4.00	2.50	37.50	50.00	41.63	1.00
43	Alamo	1550.31	41.00	92.50	4.00	1.75	25.00	57.50	41.73	1.00
41	UFV-1 (BP-2)	1508.63	30.50	71.00	4.00	1.75	28.75	50.00	87.90	2.75
7	ICA Tunia	1508.63	30.50	91.75	4.00	2.50	45.00	90.00	56.38	1.50
4870	Palmetto	1502.38	33.25	81.00	4.00	2.50	30.00	83.75	93.35	2.50
45	ICA L-109	1464.88	42.00	95.50	4.00	2.00	38.75	78.75	69.50	2.25
46	Ecuador 2	1402.36	33.75	88.50	4.00	3.00	37.50	80.00	52.28	2.25
10	Improved Pelican	1389.86	34.00	82.50	4.00	3.00	60.00	81.25	90.02	3.50
3	SJ-2	1381.53	33.75	89.00	4.00	2.50	52.50	76.25	71.98	3.00
40	IGH 24	1339.85	46.00	96.50	4.00	1.75	30.00	67.50	66.95	2.00
39	IGH 23	1319.01	41.75	92.00	3.75	3.25	30.00	75.00	76.72	2.25
44	Foster	1289.84	26.00	81.00	4.00	2.00	32.50	63.75	27.03	1.00
9	Jupiter	1185.65	33.75	96.00	4.00	3.00	41.25	57.50	50.68	1.75
37	G 2120	1183.57	51.00	92.00	4.00	1.50	31.25	55.00	116.80	4.50
14	Williams	1158.56	25.00	81.00	3.50	3.00	41.25	28.75	51.30	2.00
8	ICA Caribe	935.60	37.00	108.00	4.00	2.00	26.25	58.75	90.88	2.75
	Grand mean	1372.15	35.88	87.52	3.95	2.38	36.72	65.86	67.82	2.25
	Standard error of cultivar mean	103.73	.38	2.24	.14	.43	7.73	8.14	3.15	.34
	Coefficient of variation (%)	15.12	2.11	5.13	7.13	36.46	42.13	24.71	9.30	29.81
	5% LSD Cultivar means (*****=ns)	295.48	1.08	6.39	*****	*****	*****	23.18	8.98	.96

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
2	UFV-1	1.00	166.00	32.00	9.48	12.18		96.75	45.2	20.7
43	Alamo	1.25	151.50	31.00	9.18	11.83		96.25	44.5	19.3
41	UFV-1 (BP-2)	1.25	149.75	34.50	14.75	13.40		95.25	45.2	21.2
7	ICA Tunia	1.25	152.25	27.25	10.68	15.03		95.25	44.8	20.2
4870	Palmetto	1.00	160.25	33.00	14.23	11.45		95.00	45.3	19.1
45	ICA L-109	1.00	136.00	39.28	12.50	8.33		82.50	46.5	16.6
46	Ecuador 2	1.25	118.25	41.25	7.15	10.80		92.75	44.7	19.7
10	Improved Pelican	1.00	149.00	30.75	13.20	12.78		90.00	46.5	20.8
3	SJ-2	1.00	156.25	35.25	13.00	12.48		88.75	45.3	21.2
40	IGH 24	1.00	144.50	44.75	14.93	12.05		89.25	43.2	19.7
39	IGH 23	1.00	153.00	38.50	24.33	11.95		88.75	45.3	17.5
44	Foster	1.25	166.00	29.75	4.00	14.78		94.50	43.1	22.1
9	Jupiter	1.00	177.25	28.75	10.70	11.73		91.00	44.7	21.7
37	G 2120	1.75	153.75	69.00	14.50	5.10		100.00	46.4	14.3
14	Williams	1.25	150.50	17.50	5.98	16.38		89.50	45.3	21.3
8	ICA Caribe	1.00	147.00	42.25	10.03	8.98		58.75	46.6	17.1
	Grand mean	1.14	151.95	35.92	11.79	11.83		90.27		
	Standard error of cultivar mean	.17	8.51	4.70	1.48	.51		1.95		
	Coefficient of variation (%)	29.45	11.20	26.18	25.09	8.56		4.31		
	5% LSD Cultivar means (*****=ns)	*****	24.24	13.39	4.21	1.44		5.54		

Table 92. Experiment 763, 1980

Country: MALI
Region: AFRICA
Latitude: 12° 38′ N
Longitude: 8° W
Zone: 4
Elevation: 325 m

Site: AGRONOMIC RESEARCH STATION, SOTUBA
Cooperator(s): DIELIMOUSSA SOUMANO

Date planted: July 30, 1980
Date harvested: November 1980
Fertilizer used (kg/ha): N 25.0, K 25.0, P 26.4
Amount of moisture: 398.8 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodgin
77	ICA L-124	1177.32	32.50	92.00						
41	UFV-1 (BP-2)	1112.72	33.25	93.75						
2	UFV-1	1021.04	36.00	92.00						
19	Davis	954.36	33.50	93.75						
43	Alamo	918.93	38.00	93.75						
13	Bossier	881.43	27.00	76.25						
9	Jupiter	862.67	35.00	95.25						
10	Improved Pelican	821.00	38.50	94.50						
7	ICA Tunia	798.08	34.75	92.00						
14	Williams	718.89	27.00	88.25						
3	SJ-2	710.56	36.25	93.75						
40	IGH 24	673.05	40.25	101.50						
39	IGH 23	660.55	38.00	88.25						
37	G 2120	610.54	45.50	96.25						
44	Foster	510.52	27.00	93.75						
	Grand mean	828.78	34.83	92.33						
	Standard error of cultivar mean	142.41	1.50	5.06						
	Coefficient of variation (%)	34.37	8.59	10.96						
	5% LSD Cultivar means (*****=ns)	*****	4.27	*****						

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percen Oil
77	ICA L-124		126.00	30.50	7.35				45.1	17.8
41	UFV-1 (BP-2)		122.50	30.25	9.93				44.9	18.9
2	UFV-1		131.25	22.75	4.95				44.7	16.1
19	Davis		115.75	28.25	5.35				46.5	17.2
43	Alamo		135.50	21.50	9.00				47.2	16.8
13	Bossier		105.25	27.50	2.98				46.7	18.1
9	Jupiter		121.00	24.50	9.08				46.0	17.6
10	Improved Pelican		116.00	26.75	7.73				45.5	19.8
7	ICA Tunia		118.50	26.75	8.28				44.3	16.5
14	Williams		86.25	56.75	6.03				45.7	19.5
3	SJ-2		130.50	28.75	8.40				44.8	19.7
40	IGH 24		117.25	28.00	10.83				44.6	18.1
39	IGH 23		119.00	23.50	11.55					
37	G 2120		126.25	36.50	9.08				46.2	14.9
44	Foster		112.00	20.00	4.03				44.8	17.6
	Grand mean		118.87	28.82	7.63					
	Standard error of cultivar mean		10.18	10.64	.82					
	Coefficient of variation (%)		17.13	73.82	21.35					
	5% LSD Cultivar means (*****=ns)		*****	*****	2.33					

Table 93. Experiment 773, 1980

Country: MAURITIUS
Region: AFRICA
Latitude: 20° S
Longitude: 57° E
Zone: 4
Elevation: 316 m

Site: REDUIT
Cooperator(s): I. RAJKOMAR

Date planted: November 24, 1980
Date harvested: February 1981
Soil type: sand 82%, silt 16%, clay 2%, pH 6.4
Fertilizer used (kg/ha): P 25, K 25
Amount of moisture: 801.6 mm
Number of irrigations: 7 (117.8 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
14	Williams	2396.31	26.00	89.25	3.00	3.50	95.00	95.00	53.63	1.00
19	Davis	1981.65	44.00	104.00	3.00	3.50	95.00		62.45	2.00
44	Foster	1604.49	44.00	106.00	3.00	3.25	97.50	42.50	55.63	2.25
7	ICA Tunia	1316.93	44.00	112.00	2.75	3.25	96.25	51.25	97.62	2.75
43	Alamo	1312.76	67.00	148.75	3.00	3.25	93.75	52.50	99.97	3.75
10	Improved Pelican	979.36	67.00	135.25	3.00	3.25	87.50	48.75	116.33	2.75
40	IGH 24	862.67	73.00	170.00	3.00	3.75	88.75	41.25	113.90	3.50
9	Jupiter	823.08	67.00	158.50	3.00	3.75	96.25	38.75	115.50	4.00
41	UFV-1 (BP-2)	725.14	44.00	150.50	2.75	3.00	96.25	205.00	126.75	3.25
2	UFV-1	645.96	67.00	147.25	2.75	3.25	96.25	52.50	97.33	3.50
39	IGH 23	500.10	63.25	148.75	2.75	3.75	92.50	33.75	125.20	4.25
37	G 2120	456.34	36.00	128.00	3.00	3.25	98.75	45.00	101.90	3.50
3	SJ-2	335.48	50.00	143.50	3.00	3.75	97.50	37.50	126.05	4.75
64	ICA L-125	239.63	67.00	176.00	3.00	3.25	100.00	41.25	114.58	2.25
81	Ecuador 1	235.46	67.00	132.00	2.75	3.25	98.75	47.50	97.35	5.00
8	ICA Caribe	197.96	72.00	176.00	2.75	3.50	83.75	55.00	102.58	3.50
	Grand mean	913.33	56.14	139.11	2.91	3.41	94.61	55.47	100.42	3.25
	Standard error of cultivar mean	152.55	1.79	3.48	.13	.31	2.36	35.80	4.35	.29
	Coefficient of variation (%)	33.40	6.36	5.01	8.60	18.14	4.98	129.10	8.66	18.13
	5% LSD Cultivar means (*****=ns)	434.52	5.09	9.93	*****	*****	6.71	*****	12.38	.84

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
14	Williams	1.00	227.25	19.75	5.40	19.50	2.00	78.50	44.8	20.9
19	Davis	1.00	200.25	37.75	8.05	11.00	2.75	74.50	42.9	21.3
44	Foster	1.00	220.50	30.75	9.23	8.50	3.25	75.00	42.5	19.9
7	ICA Tunia	1.00	195.75	44.00	14.03	13.25	2.25	77.00	44.6	18.3
43	Alamo	2.75	207.25	25.50	7.58	15.50	3.25	68.00	45.6	22.4
10	Improved Pelican	1.25	130.25	52.25	11.43	9.75	3.25	45.25	43.5	21.4
40	IGH 24	1.25	133.50	34.25	12.15	14.75	4.50	20.50	41.5	22.4
9	Jupiter	3.00	154.50	25.00	11.08	14.75	4.50	13.00	43.7	22.7
41	UFV-1 (BP-2)	1.75	166.75	38.25	6.70	10.00	4.75	21.50	43.6	21.4
2	UFV-1	2.75	176.00	27.75	8.18	10.50	4.75	40.00	45.0	20.7
39	IGH 23	2.25	167.00	43.25	14.88	9.75	4.25	35.00	44.9	20.4
37	G 2120	1.00	187.00	44.75	11.20	5.25	4.00	50.00	48.4	15.4
3	SJ-2	3.50	179.50	21.00	13.88	10.50	4.75	34.00	44.4	21.8
64	ICA L-125	1.50	115.25	35.00	9.93	9.00	5.00	4.50	42.7	21.8
81	Ecuador 1	1.00	178.75	30.75	14.23	11.75	3.75	75.00	46.8	20.1
8	ICA Caribe	1.50	124.00	28.75	10.38	9.00	5.00	7.50	47.8	18.4
	Grand mean	1.72	172.72	33.67	10.52	11.42	3.88	44.95		
	Standard error of cultivar mean	.39	13.24	7.40	1.58	.60	.30	6.63		
	Coefficient of variation (%)	45.84	15.33	43.97	30.12	10.54	15.69	29.48		
	5% LSD Cultivar means (*****=ns)	1.12	37.71	*****	4.51	1.71	.87	18.87		

Table 94. Experiment 211, 1981

Country: MAURITIUS
Region: AFRICA
Latitude: 20° S
Longitude: 57° E
Zone: 5
Elevation: 316 m

Site: REDUIT
Cooperator(s): V. VEERAPA, I. RAJKOMAR

Date planted: June 8, 1981
Date harvested: September 1981
Soil type: sand 90%, silt 8%, clay 2%, pH 5.4, OM 4.13%, low humic latosols
Fertilizer used (kg/ha): P 25.0, K 25.0
Amount of moisture: 216.8
Number of irrigations: 10 (127 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
2	UFV-1	1462.79	44.00	113.50	1.50	4.25	95.00	100.00	29.75	1.00
35	Crawford	1456.54	45.00	102.50	1.00	3.25	96.25	100.00	26.00	1.00
51	Celest	1281.51	37.50	126.25	1.50	3.50	100.00	100.00	20.75	1.00
48	Gail	1151.06	37.00	99.25	1.50	4.00	86.25	100.00	25.00	1.00
43	Alamo	1098.14	48.50	128.75	1.00	3.75	98.75	100.00	37.00	1.00
49	Centennial	979.78	35.50	99.25	1.50	4.00	98.75	100.00	21.00	1.00
19	Davis	854.34	39.75	120.00	2.00	4.00	87.50	97.50	19.50	1.00
58	Williams 79	658.46	43.00	130.25	1.25	3.25	98.75	100.00	20.50	1.00
53	Ware	564.70	33.25	123.50	1.50	3.75	97.50	96.25	19.50	1.00
69	Essex	552.19	38.25	146.25	1.75	3.75	87.50	100.00	23.75	1.00
44	Foster	514.69	33.00	141.00	1.25	3.50	97.50	97.50	19.50	1.00
10	Improved Pelican	440.50	56.00	164.75	1.75	4.00	92.50	82.50	32.75	1.00
47	PK-73-94	414.67	41.00	151.75	1.25	3.75	98.75	100.00	27.75	1.00
50	DeSoto	339.65	42.75	148.50	1.50	3.00	97.50	100.00	21.75	1.00
52	Bay	279.22	37.75	140.25	2.00	3.75	83.75	100.00	21.25	1.00
75	Braxton	170.87	42.50	153.25	2.00	4.50	72.50	93.75	24.50	1.00
	Grand mean	763.69	40.92	130.56	1.52	3.75	93.05	97.97	24.39	1.00
	Standard error of cultivar mean	135.17	2.42	4.14	.21	.30	5.35	2.31	1.97	0.00
	Coefficient of variation (%)	35.40	11.83	6.34	27.74	15.84	11.51	4.71	16.18	0.00
	5% LSD Cultivar means (*****=ns)	385.03	6.90	11.79	.60	*****	15.25	6.57	5.62	0.00

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
2	UFV-1	1.25	220.75	12.50	3.50	21.47	1.75	94.50	45.0	16.9
35	Crawford	1.00	219.00	14.00	3.50	16.95	1.50	97.00	46.8	16.6
51	Celest	1.25	209.25	11.75	3.50	22.75	1.50	91.50	45.3	16.3
48	Gail	1.00	225.50	12.75	3.50	20.65	1.50	85.00	45.3	16.1
43	Alamo	1.00	197.25	17.50	3.25	19.27	1.75	92.00	46.1	17.3
49	Centennial	1.00	174.50	14.75	3.00	18.82	1.50	82.50	46.0	16.2
19	Davis	1.00	208.75	12.25	3.00	20.50	2.00	87.50	46.5	16.7
58	Williams 79	1.50	186.00	10.00	3.25	21.25	2.25	81.50	47.0	15.8
53	Ware	1.75	188.75	6.75	3.50	27.00	2.50	84.50	46.3	15.7
69	Essex	3.50	194.75	9.75	3.25	18.50	2.75	74.00	46.8	16.5
44	Foster	1.50	216.50	6.50	3.50	18.50	3.50	55.00	46.8	16.3
10	Improved Pelican	2.25	260.50	9.75	5.00	18.00	4.00	47.00	48.0	17.2
47	PK-73-94	1.75	229.25	6.50	3.75	18.50	3.25	63.00	46.4	15.2
50	DeSoto	1.75	159.25	7.75	3.50	19.00	3.00	61.00	46.1	16.3
52	Bay	1.75	174.75	5.75	3.75	22.25	2.50	77.00	46.0	16.2
75	Braxton	2.25	212.75	4.50	6.50	24.00	4.00	35.50	45.5	16.7
	Grand mean	1.59	204.84	10.17	3.70	20.46	2.45	75.53		
	Standard error of cultivar mean	.68	19.34	1.56	.56	1.34	.31	6.95		
	Coefficient of variation (%)	84.80	18.89	30.60	30.18	13.10	25.11	18.40		
	5% LSD Cultivar means (*****=ns)	*****	*****	4.43	1.59	3.82	.88	19.79		

Table 95. Experiment 756, 1980

Country: MEXICO
Region: MESO-AMERICA
Latitude: 22° 33′ N
Longitude: 98° 31′ W
Zone: 7
Elevation: 40 m

Site: CAMPO AGRIC. AUXILIAR TANCASNEQUE
Cooperator(s): M. C. NICOLAS MALDONADO MORENO, JORGE NIETO HATEM

Date planted: August 1, 1980
Date harvested: November 1980
Soil type: arcilloso serie margosa (vertisol)
sand 19.2%, silt 30.2%, clay 50.6%, pH 7.8
Amount of moisture: 738.2 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
40	IGH 24	2440.62	49.00	122.00	4.00	1.00	38.75	100.00	76.50	1.50
8	ICA Caribe	2436.87	49.00	122.00	3.50	1.00	100.00	100.00	90.75	2.75
39	IGH 23	2148.12	49.00	105.00	4.00	2.00	100.00	100.00	78.00	1.75
2	UFV-1	2106.56	40.00	112.50	3.00	2.75	50.00	100.00	42.25	1.00
9	Jupiter	2072.19	41.00	103.00	4.00	1.00	95.00	100.00	71.25	1.25
64	ICA L-125	1953.75	45.00	124.25	4.00	1.00	57.50	100.00	80.75	2.00
41	UFV-1 (BP-2)	1926.25	38.00	99.75	4.00	2.75	81.25	100.00	94.00	2.00
43	Alamo	1740.94	48.00	101.50	4.00	3.25	58.75	100.00	52.25	1.25
16	Cobb	1673.75	29.00	95.75	4.00	2.50	100.00	81.25	43.75	1.00
3	SJ-2	1609.69	38.00	98.00	4.00	3.50	50.00	75.00	75.25	2.00
19	Davis	1504.06	33.00	95.00	3.75	2.00	50.00	100.00	37.00	1.00
37	G 2120	1382.81	54.00	98.00	3.50	1.00	50.00	100.00	99.75	2.00
44	Foster	1370.00	28.00	94.00	2.75	1.00	77.50	100.00	33.00	1.00
7	ICA Tunia	1306.87	35.00	110.00	4.00	2.00	22.50	100.00	40.50	1.00
10	Improved Pelican	1147.19	44.00	101.75	4.00	3.25	37.50	70.00	66.75	1.00
14	Williams	857.50	24.00	86.00	3.50	3.25	76.25	100.00	36.00	1.00
	Grand mean	1729.82	40.25	104.28	3.75	2.08	65.31	95.39	63.61	1.47
	Standard error of cultivar mean	141.40		.88	.24	.42	8.51	4.48	4.06	.22
	Coefficient of variation (%)	16.35		1.68	12.73	39.99	26.05	9.38	12.76	29.92
	5% LSD Cultivar means (*****=ns)	402.76		2.50	.68	1.18	24.23	12.75	11.56	.63

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
40	IGH 24	1.00	229.50	30.25	16.25	18.25	1.00	92.00	39.1	22.1
8	ICA Caribe	1.00	242.75	30.25	19.25	15.75	1.00	90.00	46.1	16.8
39	IGH 23	1.00	240.25	24.50	23.00	15.25	1.50	90.00	41.4	21.4
2	UFV-1	1.00	186.75	23.50	10.25	15.50	2.00	88.50	41.9	21.7
9	Jupiter	1.00	233.50	30.50	16.25	15.75	1.75	85.75	40.5	23.1
64	ICA L-125	1.00	77.75	50.75	11.00	17.50	1.75	97.25	42.7	20.6
41	UFV-1 (BP-2)	1.00	264.25	28.75	12.00	14.50	2.00	92.00	40.6	21.1
43	Alamo	1.00	257.75	22.75	14.00	14.75	2.00	91.00	41.7	20.6
16	Cobb	1.00	240.50	22.00	5.75	15.00	1.75	86.75	39.9	22.1
3	SJ-2	1.00	267.00	26.00	14.00	12.25	2.25	89.00	41.4	21.6
19	Davis	1.00	271.00	15.75	6.50	17.25	2.25	85.25	41.2	22.3
37	G 2120	1.00	313.00	44.00	16.00	6.75	1.75	89.50	43.1	16.2
44	Foster	1.00	265.50	20.75	7.50	15.00	2.50	92.25	39.8	22.8
7	ICA Tunia	1.00	129.00	23.00	7.00	19.50	2.00	91.75	42.0	19.0
10	Improved Pelican	1.00	59.00	48.75	7.50	14.25	2.00	92.25	42.4	19.3
14	Williams	1.00	247.25	13.00	5.75	18.50	3.25	82.75	42.7	23.0
	Grand mean	1.00	220.30	28.41	12.00	15.36	1.92	89.75		
	Standard error of cultivar mean		17.74	3.88	1.30	.29	.20	2.03		
	Coefficient of variation (%)		16.10	27.29	21.68	3.78	20.45	4.51		
	5% LSD Cultivar means (*****=ns)		50.52	11.04	3.71	.83	.56	5.77		

Table 96. Experiment 757, 1980

Country: MEXICO
Region: MESO-AMERICA
Latitude: 19° 51′ N
Longitude: 90° 33′ W
Zone: 4
Elevation: 8 m

Site: CAYAL CAMPECHE CAMP.
Cooperator(s): MARIO RIVERA

Date planted: July 15, 1980
Date harvested: November 1980
Soil type: sand 16%, silt 25%, clay 59%, pH 7.9
Fertilizer used (kg/ha): N 25, P 25, K 25
Amount of moisture: 653 mm
Substitute cultivar: Visoja

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodgin
64	ICA L-125	5088.52	48.75	116.00	4.50	1.00	42.50	97.50	128.50	3.50
19	Davis	4913.48	30.00	98.00	3.50	1.50	98.75	86.25	46.75	1.00
16	Cobb	4817.63	25.00	98.00	5.00	2.75	70.00	93.75	49.00	1.00
7	ICA Tunia	4682.19	32.00	93.00	4.50	1.50	96.25	91.25	84.00	1.00
14	Williams	4444.64	30.75	81.00	4.25	3.00	83.75	80.00	52.50	1.00
44	Foster	4244.60	25.00	83.00	4.25	3.25	86.25	70.00	33.25	1.00
2	UFV-1	3752.83	37.00	105.00	4.25	2.00	68.75	93.75	65.75	1.00
5631	Visoja	3652.81	41.00	106.75	4.50	2.75	51.25	95.00	67.75	1.00
3	SJ-2	3250.65	34.00	93.00	4.75	1.75	53.75	96.25	99.00	3.75
39	IGH 23	3086.03	49.00	103.00	4.25	1.75	70.00	95.00	104.25	3.50
41	UFV-1 (BP-2)	3073.53	33.00	100.00	4.50	1.00	53.75	97.50	105.25	2.50
9	Jupiter	2608.85	39.00	97.00	4.75	1.75	56.25	90.00	101.25	2.25
43	Alamo	2546.34	47.00	97.00	4.50	3.25	58.75	97.50	70.75	1.75
37	G 2120	2275.45	54.00	97.00	4.50	2.00	27.50	90.00	117.00	4.00
40	IGH 24	1302.34	52.00	96.25	4.25	2.75	51.25	95.00	106.25	2.50
8	ICA Caribe	1202.32	47.00	114.00	4.25	3.25	97.50	98.75	105.00	4.00
	Grand mean	3433.89	39.03	98.62	4.41	2.20	66.64	91.72	83.52	2.17
	Standard error of cultivar mean	267.68	1.95	1.69	.22	.61	10.42	3.53	2.22	.25
	Coefficient of variation (%)	15.59	10.00	3.43	9.97	55.47	31.28	7.70	5.32	22.59
	5% LSD Cultivar means (*****=ns)	762.48	5.56	4.82	.63	*****	29.69	10.05	6.33	.70

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
64	ICA L-125	1.00	126.00	28.00	12.50	12.78		41.50	44.1	21.2
19	Davis	1.00	263.50	25.00	6.50	19.73		2.75	43.8	22.0
16	Cobb	1.00	287.25	29.00	5.00	17.78		.75	42.8	22.9
7	ICA Tunia	1.00	307.25	18.50	12.75	19.38		1.50	44.9	21.7
14	Williams	1.00	345.75	16.00	5.00	18.15		7.25	43.2	23.5
44	Foster	1.00	319.00	26.00	3.50	14.45		7.00	43.3	22.2
2	UFV-1	1.00	271.75	24.75	13.00	12.13		21.50	46.7	20.2
5631	Visoja	1.00	380.50	19.50	10.75	12.53		22.75	47.0	19.2
3	SJ-2	2.00	333.25	36.00	8.50	12.80		7.75	45.0	21.7
39	IGH 23	1.00	346.50	38.50	7.00	14.50		11.75	48.1	20.2
41	UFV-1 (BP-2)	1.00	340.00	33.25	11.50	11.60		3.00	44.0	21.3
9	Jupiter	1.00	309.25	28.50	11.25	13.13		1.25	44.7	22.4
43	Alamo	1.00	296.75	20.25	17.00	11.13		3.75	45.2	21.6
37	G 2120	2.75	336.25	53.50	5.50	5.95		35.25	46.5	14.9
40	IGH 24	1.00	293.50	26.25	12.25	9.58		5.25	42.3	20.4
8	ICA Caribe	1.00	289.25	17.25	9.75	9.43		23.50	45.4	17.7
	Grand mean	1.17	302.86	27.52	9.48	13.44		12.28		
	Standard error of cultivar mean	.06	17.46	4.61	.99	.46		3.53		
	Coefficient of variation (%)	10.67	11.53	33.48	20.80	6.79		57.52		
	5% LSD Cultivar means (*****=ns)	.18	49.74	13.12	2.81	1.30		10.06		

Table 97. Experiment 799, 1980

Country: MEXICO
Region: MESO-AMERICA
Latitude: 14° 31′ N
Longitude: 92° 10′ W
Zone: 4
Elevation: 9 m

Site: TAPACHULA, CHIAPAS
Cooperator(s): REZA ALEMAN RAFAEL, JORGE NIETO HATEM

Date planted: July 10, 1980
Date harvested: October 1980
Soil type: fluvisol eutrico, sand 63.4%, silt 21.1%, clay 15.5%, pH 5.1

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
64	ICA L-125	2934.00	48.50	127.00	2.75	2.75	45.00	52.50	84.50	4.25
2	UFV-1	2677.50	40.25	113.50	2.50	1.50	61.25	71.25	68.75	2.25
9	Jupiter	2482.50	46.00	111.25	2.75	4.00	56.25	80.00	80.50	3.50
43	Alamo	2421.75	46.00	108.50	3.50	3.50	56.25	72.50	67.00	4.25
39	IGH 23	2272.75	48.00	110.25	3.25	3.75	70.00	62.50	81.75	3.75
63	Hutton	2229.50	32.50	101.00	4.00	4.00	73.75	73.75	61.75	1.75
41	UFV-1 (BP-2)	2159.75	40.00	112.00	2.50	2.50	61.25	66.25	108.25	4.00
16	Cobb	2107.00	52.00	114.00	4.00	3.50	42.50	36.25	86.00	3.25
7	ICA Tunia	2067.50	37.75	110.25	3.50	3.50	78.75	58.75	79.75	3.75
3	SJ-2	2061.00	40.00	103.00	3.50	4.00	90.00	38.75	86.75	4.50
19	Davis	2048.75	33.00	100.50	3.50	4.00	75.00	81.25	55.25	1.00
14	Williams	1933.00	26.00	88.00	2.75	4.00	71.25	52.50	71.00	1.75
10	Improved Pelican	1932.50	40.25	101.50	2.25	4.00	42.50	52.50	97.25	4.50
8	ICA Caribe	1876.75	48.00	127.00	3.50	4.00	55.00	28.75	130.00	5.00
37	G 2120	1858.75	50.00	101.75	4.00	3.50	41.25	48.75	107.75	4.75
44	Foster	1839.25	31.00	102.25	2.50	4.00	71.25	65.00	62.00	1.25
	Grand mean	2181.39	41.20	108.23	3.17	3.53	61.95	58.83	83.02	3.34
	Standard error of cultivar mean	131.69	.21	.58	.49	.38	12.22	10.03	9.26	.32
	Coefficient of variation (%)	12.07	1.00	1.08	31.16	21.60	39.46	34.10	22.30	19.14
	5% LSD Cultivar means (*****=ns)	375.10	.59	1.67	*****	1.09	*****	28.57	26.36	.91

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
64	ICA L-125	1.50	130.25	108.25	13.50	12.88	2.00	31.50	42.9	23.7
2	UFV-1	1.50	183.75	31.25	9.50	15.40	2.25	26.25	44.9	21.3
9	Jupiter	2.00	170.75	35.00	8.50	18.25	2.25	7.50	42.7	24.7
43	Alamo	2.00	168.50	31.75	9.50	15.23	1.75	23.50	42.4	24.9
39	IGH 23	2.00	171.25	43.75	7.50	16.13	2.50	26.50	45.2	22.1
63	Hutton	3.00	170.50	21.25	7.25	17.38	4.50	6.75	41.5	23.7
41	UFV-1 (BP-2)	1.75	190.50	39.00	15.25	13.85	3.25	7.25	43.1	22.8
16	Cobb	1.00	156.50	38.25	8.25	14.53	1.75	15.25	41.6	24.2
7	ICA Tunia	2.00	173.25	18.75	11.50	15.43	3.50	15.00	41.5	22.4
3	SJ-2	1.00	177.75	46.50	11.00	11.80	3.00	23.00	41.7	22.5
19	Davis	3.00	165.75	19.75	9.00	17.05	3.75	2.50	42.5	23.3
14	Williams	2.50	173.75	17.75	8.75	16.53	4.50	19.50	41.9	24.5
10	Improved Pelican	1.00	142.75	32.00	7.75	11.03	2.75	24.75	43.0	23.0
8	ICA Caribe	3.00	155.00	94.25	11.75	9.98	2.00	24.50	45.5	18.7
37	G 2120	3.00	184.25	60.00	7.50	6.45	2.75	52.75	43.8	16.4
44	Foster	1.50	180.50	19.25	7.75	16.18	4.75	3.00	42.4	23.6
	Grand mean	1.98	168.44	41.05	9.64	14.25	2.95	19.34		
	Standard error of cultivar mean	.22	10.51	6.65	1.38	.53	.23	4.45		
	Coefficient of variation (%)	21.84	12.47	32.41	28.72	7.43	15.83	46.05		
	5% LSD Cultivar means (*****=ns)	.62	29.92	18.94	3.94	1.51	.67	12.69		

Table 98. Experiment 906, 1980

Country: MOROCCO
Region: AFRICA
Latitude: 33° 59′ N
Longitude: 6° 52′ W
Zone: 10
Elevation: 25 m

Site: RABAT
Cooperator(s): H. MELLAS, M. YACOUBI, OMER ROUSSEL

Date planted: May 10, 1980
Date harvested: August 1980
Soil type: sableux
Fertilizer used (kg/ha): N 25, P 25, K 25
Number of irrigations: 12 (60 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodgi
54	Chippewa 64	3255.00	39.00	94.00			18.50	21.75	68.30	1.00
58	Williams 79	3246.25	49.75	119.00			28.00	33.25	74.18	1.00
56	Coles	2767.25	38.75	104.25			20.75	24.00	74.40	1.00
21	Calland	2700.50	44.25	128.00			19.50	29.00	92.10	1.75
59	Will	2625.50	47.00	111.50			18.25	31.25	68.45	1.75
32	Columbus	2617.00	52.50	127.25			21.00	22.75	92.32	2.25
61	Cumberland	2533.75	47.25	116.00			19.50	33.25	74.55	1.00
14	Williams	2506.75	49.00	117.00			19.25	28.00	73.95	1.00
55	Harlon	2471.00	37.75	91.25			19.25	21.25	55.25	1.00
57	Corsoy 79	2423.00	39.25	97.00			21.25	20.50	46.45	1.00
36	Evans	2383.75	38.50	87.50			18.75	28.75	49.55	1.00
50	DeSoto	2238.00	49.25	120.75			25.50	35.50	82.65	1.75
60	Kent	1971.00	52.50	118.50			18.25	31.00	76.40	1.25
38	McCall	1741.75	35.75	79.00			20.50	17.25	29.70	1.00
51	Celest	1275.25	72.75	139.75			21.00	18.75	94.18	1.00
62	York	1221.25	68.25	137.00			19.75	14.50	92.87	1.00
	Grand mean	2373.56	47.59	111.73			20.56	25.67	71.58	1.23
	Standard error of cultivar mean	336.68	1.79	3.38			2.37	4.26	4.36	.33
	Coefficient of variation (%)	28.37	7.53	6.05			23.05	33.21	12.18	53.26
	5% LSD Cultivar means (*****=ns)	959.01	5.11	9.63			*****	12.14	12.41	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percer Oil
54	Chippewa 64	1.00	191.00	49.75		18.68	1.25	85.25		
58	Williams 79	1.00	182.50	41.00		19.90	1.25	89.50		
56	Coles	1.00	131.75	71.75		18.98	1.25	90.25		
21	Calland	1.00	163.00	74.00		19.93	1.50	89.75		
59	Will	1.00	169.00	54.00		18.30	1.00	86.00		
32	Columbus	1.00	181.25	69.75		18.13	1.25	89.25		
61	Cumberland	1.00	134.25	58.25		19.65	1.25	92.25		
14	Williams	1.00	174.00	53.25		18.58	1.00	91.25		
55	Harlon	1.00	164.75	56.25		21.25	1.00	89.00		
57	Corsoy 79	1.00	188.50	54.00		20.13	1.00	93.25		
36	Evans	1.00	138.00	49.00		18.60	1.00	89.25		
50	DeSoto	1.00	167.50	51.25		16.50	1.25	78.75		
60	Kent	1.00	174.50	57.75		16.78	1.00	93.00		
38	McCall	1.00	146.75	30.50		17.43	1.25	84.00		
51	Celest	1.00	205.75	53.50		19.78	1.75	95.00		
62	York	1.00	142.25	64.50		35.08	1.00	92.25		
	Grand mean	1.00	165.92	55.53		19.85	1.19	89.25		
	Standard error of cultivar mean		14.46	8.51		4.85	.20	5.50		
	Coefficient of variation (%)		17.43	30.66		48.90	32.92	12.32		
	5% LSD Cultivar means (*****=ns)		41.19	*****		*****	*****	*****		

Table 99. Experiment 916, 1980

Country: MOROCCO
Region: AFRICA
Latitude: 35° 8′ N
Longitude: 6° 3′ W
Zone: 10
Elevation: 10 m

Site: KSAR EL KEBIR: GHEDIRA
Cooperator(s): M.A. YACOUBI, OMER ROUSSEL

Date planted: May 22, 1980
Date harvested: August 1980
Soil type: sand 90.1%, silt 4.2%, clay 4.8%, pH 5.5
Fertilizer used (kg/ha): N 25, P 80, K 120
Amount of moisture: 575.9 mm
Number of irrigations: 20 (448 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
50	DeSoto	2200.06	39.75	106.50	2.95	1.75	98.75	76.25	80.43	1.25
21	Calland	1901.30	36.00	103.50	3.28	2.03	97.50	77.50	56.80	1.00
61	Cumberland	1861.71	40.00	106.50	3.55	1.98	100.00	67.50	57.23	1.00
57	Corsoy 79	1702.47	38.00	93.50	3.53	1.78	98.75	82.50	41.03	1.00
14	Williams	1580.15	40.00	105.75	3.55	2.10	100.00	80.00	48.80	1.00
55	Harlon	1500.26	36.75	93.50	2.63	2.08	98.75	75.00	49.63	1.00
58	Williams 79	1395.49	40.00	105.00	2.90	1.95	97.50	65.00	51.90	1.00
54	Chippewa 64	1266.96	38.25	93.50	2.90	2.13	100.00	76.25	41.40	1.00
32	Columbus	1240.41	52.00	121.25	3.33	1.38	100.00	40.00	67.55	1.00
60	Kent	1218.04	52.00	116.50	3.50	1.93	100.00	80.00	56.58	1.00
59	Will	1204.32	38.25	99.50	3.53	2.20	100.00	66.25	42.08	1.00
56	Coles	1154.11	37.75	97.50	3.50	2.10	100.00	87.50	40.30	1.00
36	Evans	1104.60	26.00	89.00	3.15	1.75	97.50	70.00	28.10	1.00
51	Celest	873.38	65.00	131.00	4.05	1.78	98.75	22.50	76.55	1.25
38	McCall	841.42	26.00	89.00	3.23	2.65	98.75	65.00	34.05	1.00
62	York	711.93	66.75	131.00	3.05	1.65	100.00	25.00	74.98	1.00
	Grand mean	1359.79	42.03	105.16	3.29	1.95	99.14	66.02	52.96	1.03
	Standard error of cultivar mean	225.16	.92	1.25	.33	.23	.93	7.83	5.69	.09
	Coefficient of variation (%)	33.12	4.36	2.39	19.96	23.30	1.87	23.71	21.47	17.33
	5% LSD Cultivar means (*****=ns)	641.36	2.61	3.57	*****	*****	*****	22.29	16.20	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
50	DeSoto	1.00	217.75	28.55	9.95	20.76	2.50		41.9	19.0
21	Calland	1.00	179.75	22.15	10.20	21.48	2.50		41.5	19.2
61	Cumberland	1.00	191.75	24.45	9.68	22.07	1.75		41.4	21.6
57	Corsoy 79	1.00	173.00	25.15	8.43	16.65	1.25		41.7	20.1
14	Williams	1.00	181.50	16.85	8.18	20.50	1.25		41.4	23.7
55	Harlon	1.00	172.00	19.05	11.33	19.67	1.50		40.1	20.6
58	Williams 79	1.00	182.00	15.20	9.75	20.04	1.50		42.3	20.4
54	Chippewa 64	1.00	164.25	17.75	8.55	18.61	2.00		42.6	19.0
32	Columbus	1.00	157.00	20.20	12.60	19.25	2.25		42.8	20.3
60	Kent	1.00	164.50	19.15	11.88	21.80	2.00		42.4	20.3
59	Will	1.00	162.75	15.80	10.98	18.57	2.00		41.1	22.4
56	Coles	1.25	148.75	13.55	8.33	21.08	2.50		42.1	20.8
36	Evans	1.00	171.50	13.15	8.23	18.90	2.00		40.5	21.3
51	Celest	1.00	179.50	19.90	20.53	23.92	4.00		44.5	19.7
38	McCall	1.25	157.50	11.33	9.38	18.48	1.50		40.1	20.0
62	York	1.00	176.25	18.15	14.90	21.81	3.00		42.1	17.6
	Grand mean	1.03	173.73	18.77	10.80	20.22	2.09			
	Standard error of cultivar mean	.09	13.72	4.29	.98	.92	.28			
	Coefficient of variation (%)	17.33	15.79	45.66	18.18	9.15	26.58			
	5% LSD Cultivar means (*****=ns)	*****	*****	*****	2.80	2.63	.79			

Table 100. Experiment 921, 1980

Country: MOROCCO
Region: AFRICA
Latitude: 34° 55′ N
Longitude: 2° 1′ W
Zone: 10
Elevation: 5 m

Site: SLIMANIA, BERKANE
Cooperator(s): CHRISTOPHE CZARNOCKI and M. YACOUBI

Date planted: June 2, 1980
Date harvested: September 1980
Soil type: sand 12%, silt 38%, clay 50%, pH 7.5, subtropical steppe
Fertilizer used (kg/ha): N 25, P 25, K 25
Amount of moisture: 832.9 mm
Number of irrigations: 12 (720 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodgi
50	DeSoto	3200.64	30.00	126.75	3.50	2.25	92.50	95.00	74.90	1.00
32	Columbus	2773.47	35.00	138.00	3.75	2.00	95.00	87.50	83.20	1.00
14	Williams	2698.46	32.50	113.50	3.50	2.75	80.00	95.00	76.00	1.00
57	Corsoy 79	2608.85	30.00	102.50	3.50	2.50	90.00	91.25	64.80	1.00
36	Evans	2600.52	30.00	91.25	3.00	2.50	98.75	82.50	57.35	1.00
58	Williams 79	2575.51	31.25	109.50	3.50	2.50	87.50	97.50	68.65	1.00
21	Calland	2515.09	30.00	125.25	3.75	2.75	95.00	93.75	82.50	1.25
62	York	2408.81	60.75	157.50	4.00	2.50	97.50	85.00	82.60	2.00
51	Celest	2406.73	63.00	157.50	3.50	2.25	92.50	80.00	85.50	2.25
59	Will	2396.31	30.00	100.50	3.50	2.50	93.75	97.50	65.00	1.00
61	Cumberland	2283.79	30.00	104.50	3.75	2.25	90.00	92.50	62.60	1.00
60	Kent	2277.54	35.00	135.25	3.75	3.00	86.25	90.00	76.75	1.00
55	Harlon	2275.45	30.00	91.75	3.75	2.75	88.75	87.50	62.40	1.25
54	Chippewa 64	2062.91	30.00	94.00	3.50	2.50	88.75	83.75	60.75	1.00
56	Coles	2023.32	30.00	98.50	3.50	2.50	96.25	88.75	68.45	1.00
38	McCall	1996.23	30.00	87.00	3.25	3.00	93.75	73.75	49.00	1.00
	Grand mean	2443.98	34.84	114.58	3.56	2.53	91.64	88.83	70.03	1.17
	Standard error of cultivar mean	306.76	.52	3.26	.31	.39	4.49	3.69	3.95	.18
	Coefficient of variation (%)	25.10	2.98	5.70	17.32	30.71	9.81	8.32	11.28	31.36
	5% LSD Cultivar means (*****=ns)	*****	1.48	9.30	*****	*****	*****	10.52	11.25	.52

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percer Oil
50	DeSoto	1.00	254.75	23.50	11.10	21.25	46.00	92.75	41.9	20.4
32	Columbus	1.00	228.00	26.25	10.55	20.75	63.75	88.50	43.0	20.8
14	Williams	1.00	246.00	21.25	12.90	19.75	23.50	96.50	42.2	21.3
57	Corsoy 79	1.00	236.00	37.00	8.25	13.25	45.25	83.50	42.2	21.3
36	Evans	1.00	246.50	31.75	6.90	13.86	24.50	67.25	40.0	22.9
58	Williams 79	1.00	236.75	22.00	11.30	18.75	43.75	91.75	42.2	21.5
21	Calland	1.00	220.75	20.25	10.50	20.75	54.00	86.25	42.4	20.6
62	York	1.00	177.50	35.75	10.75	20.50	26.50	89.00	41.4	17.8
51	Celest	1.00	252.25	30.00	15.85	23.25	53.75	95.75	43.7	17.8
59	Will	1.00	228.25	25.50	9.95	15.25	47.00	88.25	42.8	21.1
61	Cumberland	1.00	207.50	27.00	10.00	17.50	38.75	92.00	41.6	22.5
60	Kent	1.00	260.00	25.25	10.30	22.75	36.75	91.75	42.2	21.4
55	Harlon	1.00	253.00	26.50	9.65	15.50	51.75	75.50	40.7	21.8
54	Chippewa 64	1.00	275.75	22.75	10.05	13.75	57.00	93.75	42.1	20.0
56	Coles	1.00	240.00	26.00	9.40	16.25	49.00	83.25	42.6	20.4
38	McCall	1.00	246.00	25.75	6.70	14.75	39.50	77.25	40.1	21.4
	Grand mean	1.00	238.06	26.66	10.26	17.99	43.80	87.06		
	Standard error of cultivar mean		12.23	3.11	.99	1.05	13.31	4.01		
	Coefficient of variation (%)		10.28	23.37	19.32	11.62	60.78	9.20		
	5% LSD Cultivar means (*****=ns)		34.85	8.87	2.82	2.98	*****	11.41		

Table 101. Experiment 328, 1981

Country: MOROCCO
Region: AFRICA
Latitude: 2° 19′ N
Longitude: 20° 19′ W
Zone: 10
Elevation: 85 m

Site: SLIMANIA, BERKANE
Cooperator(s): AHMED MABROUK, YACOUBI MOHAMED ABDOUH

Date planted: May 15, 1981
Date harvested: August 1981
Soil type: sand 12%, silt 38%, clay 50%, pH 7.5, OM 2.1, subtropical steppe
Fertilizer used (kg/ha): N 25.0, P 25.0, K 25.0
Amount of moisture: 730.8 mm
Number of irrigations: 11 (660 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
74	Pella	5151.03	33.00	111.00	3.50	1.75	97.50	98.75	85.90	1.00
72	Amcor	5142.69	33.00	105.00	3.25	2.75	96.25	97.50	91.80	1.25
50	DeSoto	5059.34	35.00	115.50	3.50	2.50	95.00	87.50	85.30	1.00
57	Corsoy 79	4980.16	29.00	97.00	3.50	2.25	97.50	96.25	87.50	1.25
60	Kent	4888.48	39.50	125.25	3.25	2.50	100.00	88.75	98.60	1.00
61	Cumberland	4855.14	34.00	116.00	2.75	2.00	97.50	92.50	76.15	1.00
73	Century	4842.63	32.00	107.25	3.25	2.50	97.50	96.25	79.35	1.00
35	Crawford	4709.27	43.50	123.50	3.25	2.50	96.25	96.25	109.25	1.75
58	Williams 79	4455.06	34.00	108.50	2.75	1.50	100.00	90.00	80.05	1.00
69	Essex	4300.86	61.50	146.00	3.00	3.00	98.75	91.25	89.75	2.25
70	Hardin	4238.35	30.00	103.00	4.00	2.00	95.00	100.00	76.35	1.00
38	McCall	4071.65	27.50	85.00	3.25	1.75	97.50	96.25	61.10	1.00
59	Will	3992.46	33.50	96.50	3.75	2.25	98.75	86.25	76.20	1.00
71	Hodgson 78	3829.93	27.50	86.00	3.25	2.50	97.50	96.25	67.40	1.00
36	Evans	3759.08	27.00	85.00	2.75	1.75	97.50	100.00	56.40	1.00
51	Celest	2129.59	72.00	162.00	3.00	3.00	98.75	96.25	115.25	5.00
	Grand mean	4400.36	37.00	110.78	3.25	2.28	97.58	94.37	83.52	1.41
	Standard error of cultivar mean	238.34	1.18	2.89	.29	.35	2.18	3.39	3.40	.15
	Coefficient of variation (%)	10.83	6.40	5.21	17.76	30.95	4.47	7.18	8.13	22.01
	5% LSD Cultivar means (*****=ns)	678.90	3.37	8.22	*****	*****	*****	*****	9.67	.44

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
74	Pella	1.00	134.50	52.75	9.15	23.87	2.00	88.25	40.3	21.2
72	Amcor	1.00	151.75	52.00	9.25	19.40	1.00	97.25	40.7	19.6
50	DeSoto	1.00	116.75	56.75	8.00	21.37	2.25	96.25	42.3	20.1
57	Corsoy 79	1.00	148.00	51.75	28.90	17.75	1.25	95.50	41.8	19.5
60	Kent	1.00	145.50	49.75	12.45	21.82	2.50	82.00	42.1	20.6
61	Cumberland	1.00	91.25	54.25	6.60	21.97	2.00	93.00	42.2	22.2
73	Century	1.00	134.25	51.25	6.85	20.10	1.75	92.00	43.6	19.6
35	Crawford	1.00	127.75	40.92	13.15	18.95	2.75	89.50	41.9	21.0
58	Williams 79	1.00	129.50	54.00	8.10	20.42	1.25	94.25	42.2	20.1
69	Essex	1.00	148.00	60.25	15.25	16.75	2.75	95.50	42.1	19.4
70	Hardin	1.00	148.50	53.50	6.05	18.32	1.25	96.00	40.6	20.3
38	McCall	1.00	140.00	46.50	10.85	17.82	1.25	97.75	41.1	19.8
59	Will	1.00	122.00	46.00	9.00	19.07	1.75	97.75	42.6	19.9
71	Hodgson 78	1.00	146.25	38.75	12.10	18.00	1.25	97.50	38.6	21.0
36	Evans	1.00	153.50	52.50	9.30	16.92	1.00	92.75	41.1	21.3
51	Celest	1.00	109.25	39.75	20.75	26.52	4.00	79.25	43.2	18.6
	Grand mean	1.00	134.17	50.04	11.61	19.94	1.87	92.78		
	Standard error of cultivar mean	0.00	9.13	4.86	5.03	.62	.26	2.52		
	Coefficient of variation (%)	0.00	13.61	19.42	86.62	6.25	27.97	5.44		
	5% LSD Cultivar means (*****=ns)	0.00	26.02	*****	*****	1.78	.75	7.19		

Table 102. Experiment 834, 1980

Country: MOZAMBIQUE
Region: AFRICA
Latitude: 15° 4′ S
Longitude: 36° 30′ E
Zone: 5
Elevation: 670 m

Site: MAPUTO
Cooperator(s): G. TOMM, W. SICHMANN, J. C. CASTIAUX

Date planted: January 21, 1981
Date harvested: May 1981
Soil type: sand 56.8%, silt 16.5%, clay 26.7%, pH 6
Fertilizer used (kg/ha): P 26.2, K 25
Amount of moisture: 704 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lod
18	Forrest	2702.69	31.25	97.00					57.50	1.
32	Columbus	2611.56	29.00	97.00					58.00	1.
44	Foster	2593.33	31.00	101.00					44.25	1.
14	Williams	2567.30	28.50	100.00					48.75	1.
48	Gail	2567.30	31.00	93.00					42.25	1.
19	Davis	2546.47	37.00	99.00					56.50	1.
50	DeSoto	2515.22	28.75	97.00					55.00	1.
49	Centennial	2489.18	31.00	99.00					52.00	1.
52	Bay	2463.15	31.50	99.00					46.75	1.
51	Celest	2390.24	35.00	103.00					47.25	1.
2	UFV-1	2301.71	41.00	103.00					66.75	1.
13	Bossier	2155.90	31.00	101.00					41.75	1.
53	Ware	1931.98	29.00	96.00					32.00	1.
47	PK-73-94	1754.93	33.00	97.00					49.00	1.
37	G 2120	1557.04	48.00	107.00					112.00	4.
43	Alamo	1114.40	46.00	105.00					69.75	1.
	Grand mean	2266.40	33.88	99.63					54.97	1.
	Standard error of cultivar mean	227.01	.53	.52					1.96	.
	Coefficient of variation (%)	20.03	3.10	1.03					7.15	10.
	5% LSD Cultivar means (*****=ns)	646.63	1.50	1.47					5.60	.

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Perc O
18	Forrest	1.00	157.00	35.50	5.00	13.50	4.00	7.00	43.3	18
32	Columbus	1.25	126.00	31.75	2.75	17.70	4.00	21.00	45.7	19
44	Foster	1.00	146.50	29.50	2.25	16.50	4.00	14.00	44.3	19
14	Williams	1.00	149.50	27.75	1.50	19.00	4.25	15.00	44.9	20
48	Gail	1.00	143.00	31.75	2.00	20.40	4.25	5.00	45.5	16
19	Davis	1.00	179.50	30.50	4.75	17.00	4.00	15.00	44.1	18
50	DeSoto	1.00	132.25	32.75	2.75	20.10	4.00	16.00	45.0	20
49	Centennial	1.00	145.25	28.00	4.00	17.50	4.00	14.00	45.7	18
52	Bay	1.00	153.25	28.00	2.25	18.70	4.75	14.00	44.0	19
51	Celest	1.00	141.25	28.25	4.00	19.70	3.75	22.00	43.6	19
2	UFV-1	1.00	128.00	37.50	7.75	13.50	2.50	6.00	44.3	17
13	Bossier	1.00	129.50	30.75	2.25	18.00	3.00	9.00	45.8	17
53	Ware	1.00	152.75	18.50	1.00	25.60	4.50	22.00	44.1	19
47	PK-73-94	1.75	158.50	34.75	4.75	16.50	4.25	3.00	43.4	16
37	G 2120	1.00	141.25	178.25	7.00	5.60	3.00	6.00	46.2	13
43	Alamo	1.00	142.50	30.75	9.75	12.00	2.00		44.5	17
	Grand mean	1.06	145.38	39.64	3.98	16.96	3.77	11.81		
	Standard error of cultivar mean	.09	8.30	6.28	.72		.33			
	Coefficient of variation (%)	16.45	11.42	31.71	36.34		17.74			
	5% LSD Cultivar means (*****=ns)	.25	23.64	17.90	2.06		.95			

Table 103. Experiment 802, 1980

Country: NEPAL
Region: ASIA
Latitude: 27° 40′ N
Longitude: 85° 20′ E
Zone: 9
Elevation: 1360 m

Site: AGRONOMY FARM, KHUMALTAR
Cooperator(s): M. P. BHARATI and R. K. NEUPANE

Date planted: May 28, 1980
Date harvested: October 1980
Fertilizer used (kg/ha): N 25, P 25, K 25
Amount of moisture: 853 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
49	Centennial	2814.73	52.00	118.00					72.75	1.00
18	Forrest	2696.79	45.00	115.00					76.00	1.00
48	Gail	2631.78	53.00	118.00					75.75	1.25
19	Davis	2583.02	57.00	125.00					75.00	1.25
47	PK-73-94	2498.00	35.00	102.00					81.75	1.00
52	Bay	2493.42	51.00	119.00					71.75	1.25
44	Foster	2296.71	57.00	148.00					70.75	1.75
51	Celest	2295.88	52.00	122.00					66.75	1.00
2	UFV-1	2275.45	63.00	151.00					101.75	3.50
50	DeSoto	2088.75	35.00	105.00					65.75	1.25
13	Bossier	2002.48	57.00	148.00					86.00	3.25
43	Alamo	1989.98	52.00	118.00					87.50	1.00
14	Williams	1968.31	35.00	103.00					60.00	1.25
10	Improved Pelican	1824.53	57.00	148.00					128.25	2.75
37	G 2120	1583.65	63.00	151.00					108.25	4.75
53	Ware	699.31	35.00	124.00					31.25	1.00
	Grand mean	2171.42	49.94	125.94					78.70	1.77
	Standard error of cultivar mean	274.54							3.68	.40
	Coefficient of variation (%)	25.29							9.34	45.72
	5% LSD Cultivar means (*****=ns)	782.01							10.47	1.15

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
49	Centennial	1.00	184.75	36.25	16.50	15.25	3.00			
18	Forrest	1.00	185.25	40.50	19.25	14.75	3.00			
48	Gail	1.00	174.50	27.75	13.25	22.25	4.00			
19	Davis	1.00	181.00	34.00	18.50	20.25	2.00			
47	PK-73-94	1.00	185.75	45.00	12.25	18.75	4.00			
52	Bay	1.00	180.00	26.50	16.00	17.50	3.00			
44	Foster	1.00	179.75	37.75	16.25	13.50	3.00			
51	Celest	1.00	165.00	20.00	17.25	23.25	4.00			
2	UFV-1	1.00	182.75	37.25	33.00	14.50	2.00			
50	DeSoto	1.00	189.00	22.25	12.75	20.25	5.00			
13	Bossier	1.00	182.50	42.25	19.50	15.00	4.00			
43	Alamo	1.00	184.50	47.25	23.75	14.75	1.00			
14	Williams	1.00	184.50	18.25	13.50	20.00	5.00			
10	Improved Pelican	1.00	181.25	88.25	34.50	12.75	1.00			
37	G 2120	1.00	179.50	49.50	26.75	8.25	2.00			
53	Ware	1.00	126.00	21.00	8.50	26.75	5.00			
	Grand mean	1.00	177.88	37.11	18.84	17.36	3.19			
	Standard error of cultivar mean		5.68	3.85	1.84	.34				
	Coefficient of variation (%)		6.39	20.77	19.48	3.86				
	5% LSD Cultivar means (*****=ns)		16.19	10.98	5.23	.95				

Table 104. Experiment 804, 1980

Country: NEPAL
Region: ASIA
Latitude: 27° 12′ N
Longitude: 84° 20′ E
Zone: 7
Elevation: 100 m

Site: PARWANIPUR, NARYANI ZONE
Cooperator(s): B. P. SHAH, M. P. BHARATI

Date planted: June 23, 1980
Date harvested: September 1980
Fertilizer used (kg/ha): N 20, P 60, K 30
Amount of moisture: 722.4 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodg
44	Foster	2434.24	46.50	117.50					52.80	
49	Centennial	2110.42	44.00	113.50					45.45	
18	Forrest	2023.32	39.00	101.00					56.45	
47	PK-73-94	1900.38	49.00	125.00					66.70	
13	Bossier	1878.71	45.75	115.25					53.40	
43	Alamo	1848.29	63.00	124.50					79.65	
52	Bay	1814.53	39.00	117.75					55.30	
37	G 2120	1654.50	65.75	114.75					101.10	
19	Davis	1521.14	44.25	108.75					62.00	
2	UFV-1	1512.80	60.25	125.50					75.55	
14	Williams	1500.30	38.00	98.00					62.95	
50	DeSoto	1437.79	39.00	105.50					66.20	
51	Celest	1254.42	44.25	105.00					70.05	
53	Ware	902.26	37.25	102.00					29.70	
48	Gail	896.01	39.00	108.75					40.95	
10	Improved Pelican	877.26	63.00	123.00					89.10	
	Grand mean	1597.90	47.31	112.86					62.96	
	Standard error of cultivar mean	137.18	.66	3.38					3.40	
	Coefficient of variation (%)	17.17	2.80	6.00					10.79	
	5% LSD Cultivar means (*****=ns)	390.75	1.89	9.64					9.68	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Perce Oil
44	Foster			44.30						
49	Centennial			36.95						
18	Forrest			50.75						
47	PK-73-94			39.85						
13	Bossier			51.95						
43	Alamo			49.75						
52	Bay			36.28						
37	G 2120			53.50						
19	Davis			39.45						
2	UFV-1			40.95						
14	Williams			45.85						
50	DeSoto			43.10						
51	Celest			40.05						
53	Ware			28.70						
48	Gail			39.00						
10	Improved Pelican			65.45						
	Grand mean			44.12						
	Standard error of cultivar mean			5.54						
	Coefficient of variation (%)			25.13						
	5% LSD Cultivar means (*****=ns)			15.79						

Table 105. Experiment 330, 1981

Country: NEPAL
Region: ASIA
Latitude: 27° 40′ N
Longitude: 85° 20′ E
Zone: 9
Elevation: 360 m

Site: AGRONOMY FARM, KHUMALTAR
Cooperator(s): R. K. NEUPANE, M. P. BHARATI

Date planted: June 2, 1981
Date harvested: August 1981
Fertilizer used (kg/ha): N 20.0, P 25.0, K 25.0
Amount of moisture: 886.6 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
51	Celest	1804.11	68.00	111.00	1.00 (1)	1.00 (1)	95.00 (1)	100.00 (1)	62.00	1.00
60	Kent	1602.40	57.00	116.00	2.00 (1)	1.00 (1)	90.00 (1)	90.00 (1)	55.50	1.00
50	DeSoto	1534.47	57.00	104.25	1.00 (1)	1.00 (1)	90.00 (1)	95.00 (1)	52.25	1.00
35	Crawford	1352.77	57.00	111.00	1.00 (1)	2.00 (1)	90.00 (1)	85.00 (1)	63.75	1.00
69	Essex	1248.17	65.00	110.50	2.00 (1)	1.00 (1)	85.00 (1)	95.00 (1)	41.75	1.00
58	Williams 79	1151.90	40.00	105.00	3.00 (1)	2.00 (1)	85.00 (1)	85.00 (1)	43.25	1.00
72	Amcor	959.78	54.00	102.75	2.00 (1)	2.00 (1)	85.00 (1)	95.00 (1)	35.50	1.00
59	Will	953.11	57.00	102.50	2.00 (1)	3.00 (1)	80.00 (1)	90.00 (1)	38.25	1.00
73	Century	930.19	54.50	103.50	1.00 (1)	1.00 (1)	80.00 (1)	90.00 (1)	38.50	1.00
74	Pella	921.43	45.00	104.00	1.00 (1)	1.00 (1)	100.00 (1)	85.00 (1)	44.25	1.00
61	Cumberland	887.68	86.00	101.50	2.00 (1)	2.00 (1)	90.00 (1)	85.00 (1)	35.25	1.00
70	Hardin	643.46	78.00	91.50	3.00 (1)	1.00 (1)	95.00 (1)	85.00 (1)	31.00	1.00
38	McCall	546.78	36.00	92.00	1.00 (1)	2.00 (1)	90.00 (1)	95.00 (1)	33.75	1.00
71	Hodgson 78	487.60	35.00	91.25	1.00 (1)	1.00 (1)	90.00 (1)	90.00 (1)	37.00	1.00
57	Corsoy 79	462.59	37.00	93.25	3.00 (1)	2.00 (1)	80.00 (1)	95.00 (1)	33.75	1.00
36	Evans	364.24	35.00	90.50	1.00 (1)	2.00 (1)	95.00 (1)	85.00 (1)	29.00	1.00
	Grand mean	990.67	53.84	101.91	1.69	1.56	88.75	90.31	42.17	1.00
	Standard error of cultivar mean	194.47	1.88	3.23	.79	.63	5.92	4.99	3.37	0.00
	Coefficient of variation (%)	39.26	6.99	6.34	47.00	40.27	6.67	5.52	15.97	0.00
	5% LSD Cultivar means (*****=ns)	553.93	5.36	9.20	*****	*****	*****	*****	9.59	0.00

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
51	Celest	1.00	187.00	23.25	17.75	19.75	1.00 (1)			
60	Kent	1.00	175.75	27.00	14.50	22.00	3.00 (1)			
50	DeSoto	1.00	189.00	22.25	14.50	18.25	3.00 (1)			
35	Crawford	1.00	181.75	25.50	17.50	19.00	4.00 (1)			
69	Essex	1.00	183.00	23.25	14.00	16.75	3.00 (1)			
58	Williams 79	1.00	187.25	23.00	12.00	16.25	4.00 (1)			
72	Amcor	1.00	175.25	18.00	12.75	17.00	5.00 (1)			
59	Will	1.00	190.25	21.75	11.50	16.25	5.00 (1)			
73	Century	1.00	181.25	18.25	15.75	15.50	5.00 (1)			
74	Pella	1.00	180.25	18.25	10.50	19.75	2.00 (1)			
61	Cumberland	1.00	181.00	17.75	11.25	21.25	5.00 (1)			
70	Hardin	1.00	178.75	18.00	11.25	18.50	4.00 (1)			
38	McCall	1.00	179.00	19.25	11.75	15.75	4.00 (1)			
71	Hodgson 78	1.00	179.25	20.00	18.25	17.75	5.00 (1)			
57	Corsoy 79	1.00	187.00	19.25	15.00	14.50	5.00 (1)			
36	Evans	1.00	171.50	17.00	10.00	17.00	4.00 (1)			
	Grand mean	1.00	181.70	20.73	13.64	17.83	3.87			
	Standard error of cultivar mean	0.00	5.16	2.35	1.55	1.38	1.20			
	Coefficient of variation (%)	0.00	5.68	22.71	22.71	15.52	31.08			
	5% LSD Cultivar means (*****=ns)	0.00	*****	*****	4.41	3.94	*****			

Table 106. Experiment 342, 1981

Country: NEPAL
Region: ASIA
Latitude: 27° 40′ N
Longitude: 84° 19′ E
Zone: 7
Elevation: 228 m

Site: RAMPUR
Cooperator(s): KRISHNA P. SHARMA

Date planted: August 4, 1981
Date harvested: November 1981
Soil type: pH 4.8, OM 2.41
Fertilizer used (kg/ha): N 25.0, P 25.0, K 25.0
Amount of moisture: 907.2 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodgi
50	DeSoto	1196.91	45.00	102.00	3.25		95.00		32.35	1.00
35	Crawford	1130.64	45.75	102.00	3.25		95.00		26.47	1.00
51	Celest	1114.81	44.00	121.00	4.00		92.50		34.20	1.00
69	Essex	972.69	43.00	107.00	2.75		91.25		23.77	1.00
61	Cumberland	961.44	46.00	100.00	3.25		93.75		77.07	2.00
74	Pella	946.44	42.00	107.00	4.00		91.25		30.10	1.00
58	Williams 79	923.10	45.00	102.00	3.50		88.75		28.85	1.00
59	Will	874.34	42.00	102.00	3.50		92.50		22.25	1.00
72	Amcor	844.75	42.00	97.00	3.25		95.00		24.65	1.00
73	Century	818.50	42.00	102.00	3.75		90.00		27.45	2.00
60	Kent	794.74	44.00	107.00	3.75		95.00		32.22	1.00
55	Harlon	617.21	42.00	97.00	3.00		96.25		21.65	1.00
36	Evans	549.69	43.00	97.00	3.25		91.25		18.50	1.00
38	McCall	443.84	42.00	97.00	4.00		87.50		21.62	2.00
57	Corsoy 79	404.66	45.00	97.00	3.50		95.00		23.70	1.00
70	Hardin	374.66	42.00	97.00	3.25		92.50		20.60	1.00
	Grand mean	810.53	43.42	102.12	3.45		92.66		29.09	1.19
	Standard error of cultivar mean	79.73	.06	1.25	.22		2.81		13.97	.40
	Coefficient of variation (%)	19.67	.29	2.45	12.55		6.07		96.07	33.95
	5% LSD Cultivar means (*****=ns)	227.12	.18	3.56	.62		*****		*****	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percen Oil
50	DeSoto		188.00	19.00	6.97	16.70 (1)	1.75	92.00 (1)		
35	Crawford		165.50	19.85	7.60	16.90 (1)	1.50	92.00 (1)		
51	Celest		190.50	19.95	10.57	16.70 (1)	1.50	98.00 (1)		
69	Essex		184.00	12.10	7.55	13.90 (1)	3.25	80.00 (1)		
61	Cumberland		183.00	11.87	5.82	17.10 (1)	3.50	86.00 (1)		
74	Pella		199.50	14.02	9.90	17.50 (1)	2.50	62.00 (1)		
58	Williams 79		173.00	16.72	9.27	14.80 (1)	3.00	70.00 (1)		
59	Will		178.25	13.80	8.17	17.30 (1)	2.25	67.00 (1)		
72	Amcor		190.50	16.92	7.70	14.60 (1)	4.50	80.00 (1)		
73	Century		191.25	13.42	9.37	15.60 (1)	3.75	70.00 (1)		
60	Kent		173.50	18.90	9.37	16.70 (1)	3.75	78.00 (1)		
55	Harlon		181.75	16.30	7.60	15.70 (1)	3.00	62.00 (1)		
36	Evans		182.00	11.80	6.62	12.70 (1)	3.00	50.00 (1)		
38	McCall		196.25	9.45	9.55	13.90 (1)	4.25	38.00 (1)		
57	Corsoy 79		170.00	14.40	7.15	12.20 (1)	3.75	63.00 (1)		
70	Hardin		173.75	11.70	6.45	13.20 (1)	4.25	63.00 (1)		
	Grand mean		182.55	15.01	8.11	15.34	3.09	71.94		
	Standard error of cultivar mean		8.56	2.17	.87	1.75	.42	16.06		
	Coefficient of variation (%)		9.38	28.85	21.57	11.44	27.12	22.33		
	5% LSD Cultivar means (*****=ns)		*****	6.17	2.49	*****	1.20	*****		

Table 107. Experiment 238, 1981

Country: NEW CALEDONIA Latitude: 21° S Zone: 7
Region: OCEANIA Longitude: 165° E Elevation: 0 m

Site: 74 PLAINE, BOURAIL
Cooperator(s): P. MAZARD, F. DEVINCK-SECTION RECHERCHE AGRONOMIQUE-CREA

Date planted: November 23, 1981 Date harvested: March 1982
Soil type: sandy clay, pH 6.8, OM 2.23%
Fertilizer used (kg/ha): N 20.0, P 78.5, K 75.0
Amount of moisture: 836 mm
Number of irrigations: 1 (13 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
19	Davis		45.00		2.00	2.25	88.75	63.75	71.25	1.00
47	PK-73-94		51.50		2.75	3.25	88.75	55.00	70.00	2.25
2	UFV-1		58.50		2.25	2.75	93.75	41.25	101.25	3.75
43	Alamo		61.25		3.75	3.50	95.00	47.50	82.50	3.00
44	Foster		45.25		2.00	2.50	87.50	41.25	76.25	1.50
75	Braxton		44.50		2.50	2.00	88.75	60.00	65.00	1.00
10	Improved Pelican		58.25		3.50	4.00	87.50	50.00		5.00
35	Crawford	2545.93	43.75	112.50	3.00	2.00	83.75	77.50	80.00	1.75
58	Williams 79	2075.97 (3)	39.50	118.00	3.00	2.25	91.25	50.00	77.50	1.75
16	Cobb	2010.40 (2)	39.50	125.25	2.75	2.25	83.75	45.00	66.25	2.00
69	Essex	1783.69 (2)	42.25	136.50 (2)	2.50	1.25	91.25	61.25	67.50	1.25
51	Celest	1483.63	44.25	134.75	2.75	3.00	72.50	52.50	76.25	1.25
49	Centennial	1144.67 (3)	44.75	136.25	2.25	2.25	85.00	42.50	62.50	2.25
48	Gail	954.36	42.50	132.75	2.25	1.75	97.50	77.50	65.00	1.75
52	Bay	787.66	43.00	136.50	2.50	2.50	92.50	77.50	62.50	2.00
53	Ware	133.36 (1)	38.00 (2)	137.00 (1)	3.50 (2)	3.00 (2)	90.00 (2)	65.00 (2)	45.00 (2)	1.00 (2)
	Grand mean	1498.88	46.63	128.84	2.68	2.52	88.55	56.45	72.16	2.06
	Standard error of cultivar mean	1178.13	6.97	11.34	.81	.94	10.34	20.05	12.50	1.29
	Coefficient of variation (%)	78.60	14.96	8.80	30.07	37.21	11.67	35.52	17.32	62.56
	5% LSD Cultivar means (*****=ns)	*****	*****	*****	*****	*****	*****	*****	*****	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
19	Davis	1.00	171.75	45.75	8.75		5.00 (3)	10.00	43.0	23.4
47	PK-73-94	1.25	161.50	59.25	7.50		5.00 (3)	52.00		
2	UFV-1	1.00	140.00		14.50		5.00 (3)			
43	Alamo	1.00	125.50		15.75		5.00 (2)			
44	Foster	1.00	158.25	49.75	7.50		5.00	28.00	42.8	22.6
75	Braxton	1.25	170.25	46.75	8.00		5.00	12.00	40.2	23.4
10	Improved Pelican						5.00 (1)			
35	Crawford	1.25	179.25	36.25	7.75	22.45	2.25	48.50	44.0	23.3
58	Williams 79	1.50	160.50	24.00	6.75	23.33 (3)	3.00	41.67	45.4	23.7
16	Cobb	1.75	161.25	25.25	6.25	23.50 (2)	3.75	25.67	44.3	23.4
69	Essex	1.50	177.25	36.00	7.75	24.15 (2)	4.00	20.00	44.9	23.4
51	Celest	2.00	183.50	34.50	7.25	27.12	3.00	13.00	43.7	23.4
49	Centennial	2.00	107.50	56.75	6.75	21.60 (3)	3.25	27.67	44.6	22.3
48	Gail	2.00	133.25	44.75	6.75	24.60	2.75	9.25	47.0	22.9
52	Bay	2.75	158.00	32.00	7.75	25.82	3.00	16.25	42.8	24.0
53	Ware	1.00 (2)	118.50 (2)	15.00 (1)	9.00 (2)		5.00 (2)			
	Grand mean	1.50	154.97	40.39	8.52	24.23	3.89	25.00		
	Standard error of cultivar mean	.71	27.59	15.37	3.22	2.06	1.21	21.80		
	Coefficient of variation (%)	47.14	17.80	38.05	37.85	8.50	31.06	87.18		
	5% LSD Cultivar means (*****=ns)	*****	*****	*****	*****	*****	*****	*****		

Table 108. Experiment 808, 1980

Country: PAKISTAN
Region: ASIA
Latitude: 25° 2′ N
Longitude: 63° 38′ E
Zone: 7
Elevation: 19 m

Site: A.R.I. TANDOJAM
Cooperator(s): A. H. CHAUDHRY, RAHMAN KHAN

Date planted: July 19, 1980
Date harvested: November 1980
Soil type: pH 7.8, sandy loam
Fertilizer used (kg/ha): N 100.0, P 31.25

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
2	UFV-1	2900.58	47.50	125.75	5.00	4.25			50.00	1.00
47	PK-73-94	2688.04	42.00	113.00	5.00	4.00			42.25	1.00
13	Bossier	2479.66	37.50	104.25	5.00	3.25			33.75	1.00
37	G 2120	2433.82	56.25	104.75	5.00	3.25			95.00	2.00
43	Alamo	2300.46	50.75	112.50	16.25	4.25			41.25	1.00
49	Centennial	2292.12	34.75	98.75	5.00	3.25			33.00	1.00
44	Foster	2054.58	36.00	104.50	5.00	3.75			25.25	1.00
25	Bragg	2033.74	37.50	104.25	5.00	4.50			25.75	1.00
19	Davis	1979.56	37.50	100.50	5.00	3.00			30.00	1.00
51	Celest	1967.06	36.50	98.25	5.00	5.00			35.75	1.00
10	Improved Pelican	1917.05	45.75	106.75	5.00	4.25			84.00	1.00
14	Williams	1887.88	27.50	91.00	5.00	4.75			42.50	1.00
52	Bay	1646.16	32.00	94.25	5.00	4.25			25.50	1.00
50	DeSoto	1600.32	28.50	89.75	5.00	5.00			35.00	1.00
48	Gail	1137.73	32.25	97.50	5.00	3.25			27.75	1.00
53	Ware	308.39	27.50	117.25	5.00	4.25			21.00	1.00
	Grand mean	1976.70	38.11	103.94	5.70	4.02			40.48	1.06
	Standard error of cultivar mean	223.63	.50	2.03	2.81	.45			2.18	.25
	Coefficient of variation (%)	22.63	2.64	3.92	98.63	22.26			10.79	47.06
	5% LSD Cultivar means (*****=ns)	636.99	1.43	5.80	*****	1.27			6.22	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
2	UFV-1	1.00	62.00	77.75	12.75	15.25	1.00	98.25		
47	PK-73-94	1.25	59.25	91.50	11.25	13.50	1.00	97.25		
13	Bossier	1.50	69.75	60.50	7.75	15.73	2.00	98.75		
37	G 2120	2.25	83.25	127.00	17.25	7.38	1.50	71.25		
43	Alamo	2.00	57.00	60.75	12.25	13.35	1.00	97.50		
49	Centennial	1.25	69.50	42.75	7.00	15.23	2.50	77.50		
44	Foster	1.25	46.75	79.50	8.00	14.80	1.25	96.25		
25	Bragg	1.25	48.50	70.25	6.00	17.45	2.00	95.75		
19	Davis	2.25	69.75	51.75	7.00	16.95	1.75	98.00		
51	Celest	1.00	73.75	40.50	10.25	19.03	3.50	75.75		
10	Improved Pelican	1.00	38.00	132.25	12.25	12.33	1.00	78.50		
14	Williams	2.25	72.00	42.75	7.25	17.55	2.75	65.50		
52	Bay	2.25	60.50	37.00	7.25	20.18	4.25	54.50		
50	DeSoto	2.75	72.75	33.50	7.25	18.20	3.00	64.25		
48	Gail	2.50	49.50	44.50	5.75	19.98	3.75	50.50		
53	Ware	1.75	55.50	35.25	6.25	25.28	4.75	67.75		
	Grand mean	1.72	61.73	64.22	9.09	16.38	2.31	80.45		
	Standard error of cultivar mean	.33	7.33	9.88	.89	.61	.25	8.83		
	Coefficient of variation (%)	38.48	23.73	30.77	19.65	7.40	21.98	21.95		
	5% LSD Cultivar means (*****=ns)	.94	20.87	28.14	2.54	1.73	.72	25.16		

Table 109. Experiment 810, 1980

Country: PAKISTAN
Region: ASIA
Latitude: 34° N
Longitude: 73° E
Zone: 11
Elevation: 550 m
Site: N.A.R.C. ISLAMABAD
Cooperator(s): A. RAHMAN KHAN, ALTAF HUSSAIN CHAUDHRY
Date planted: July 14, 1980
Date harvested:
Substitute cultivar: Bragg

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
49	Centennial	1685.75	36.00	110.25					52.50	
48	Gail	1578.75	36.25	95.50					40.75	
52	Bay	1528.50	35.00	92.00					38.50	
19	Davis	1497.50	44.00	105.00					50.00	
44	Foster	1464.75	48.00	99.50					53.75	
50	DeSoto	1450.00	33.25	92.00					56.50	
47	PK-73-94	1447.00	44.00	101.25					62.00	
13	Bossier	1443.50	43.00	120.75					47.50	
51	Celest	1416.50	38.25	95.00					48.50	
37	G 2120	1256.00	54.00	120.25					86.25	
14	Williams	1251.25	35.25	94.75					48.25	
53	Ware	1224.75	35.25	95.25					39.50	
18	Forrest	1216.25	35.25	105.00					45.00	
25	Bragg	1111.50	43.25	105.25					49.50	
	Grand mean	1398.00	40.05	102.27					51.32	
	Standard error of cultivar mean	184.62		8.67					6.89	
	Coefficient of variation (%)	26.41		16.96					26.86	
	5% LSD Cultivar means (*****=ns)	*****		*****					19.72	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
49	Centennial		84.25	58.75	9.00			4.00		
48	Gail		78.00	45.50	8.50			.75		
52	Bay		99.00	41.75	10.75			.25		
19	Davis		85.25	49.00	9.25			3.25		
44	Foster		101.50	49.00	9.00			1.50		
50	DeSoto		74.75	59.75	11.25			6.00		
47	PK-73-94		67.25	58.50	11.25			6.00		
13	Bossier		65.25	46.00	9.25			11.00		
51	Celest		78.50	40.75	10.75			2.50		
37	G 2120		77.50	96.75	14.50			3.00		
14	Williams		65.25	33.25	9.00			1.50		
53	Ware		82.50	46.50	8.75					
18	Forrest		80.00	54.00	10.00			3.75		
25	Bragg		75.25	36.50	9.25			2.75		
	Grand mean		79.59	51.14	10.04			3.30		
	Standard error of cultivar mean		10.96	4.25				1.63		
	Coefficient of variation (%)		27.55	16.63				98.60		
	5% LSD Cultivar means (*****=ns)		*****	12.16				4.66		

Table 110. Experiment 912, 1980

Country: PAKISTAN
Region: ASIA
Latitude: 34° 46′ N
Longitude: 72° 21′ E
Zone: 10
Elevation: 89 m

Site: MINGORA DISTRICT SWAT N.W.F.P.
Cooperator(s): ZAR QURESH and MOHAMAD RAHIM

Date planted: July 2, 1980
Date harvested: September 1980
Soil type: loam
Fertilizer used (kg/ha): P 11, K 21
Number of irrigations: 3
Substitute cultivars: Lee-74 and Davis

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
55	Harlon	4858.60	25.25	86.00					81.00	1.00
56	Coles	3655.66	26.00	93.00					103.50	3.25
58	Williams 79	3455.18	31.75	99.75					101.50	2.75
57	Corsoy 79	3410.91	27.00	94.75					83.75	1.50
38	McCall	3403.10	25.50	84.00					80.50	1.00
50	DeSoto	3387.48	32.25	98.00					103.75	3.00
9912	Lee-74	3366.65	50.25	124.00					94.50	3.00
59	Will	3322.38	32.75	92.75					70.00	2.25
36	Evans	3121.90	25.75	86.00					71.50	1.00
14	Williams	3119.29	31.00	100.25					101.00	3.00
61	Cumberland	3033.37	32.50	101.00					91.50	2.50
54	Chippewa 64	3033.37	28.25	88.25					86.75	3.00
19	Davis	3000.56	54.50	127.50					104.75	3.50
62	York	2812.05	42.00	115.00					66.75	1.75
60	Kent	2621.98	34.00	108.50					100.75	2.50
51	Celest	2338.17	52.25	116.00					91.50	3.00
	Grand mean	3246.29	34.44	100.92					89.56	2.38
	Standard error of cultivar mean	369.04	.24	.55					3.89	.33
	Coefficient of variation (%)	22.74	1.42	1.10					8.69	27.63
	5% LSD Cultivar means (*****=ns)	1051.17	.70	1.58					11.09	.93

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
55	Harlon	2.00	156.25	21.75	5.25	20.15	1.00		41.6	18.7
56	Coles	2.00	140.25	24.25	5.50	22.00	1.00		43.1	17.3
58	Williams 79	1.00	135.00	26.00	5.75	20.53	1.00		42.9	19.0
57	Corsoy 79	2.00	143.00	51.50	5.25	17.70	1.00		43.2	17.1
38	McCall	2.00	160.00	24.00	5.00	16.05	1.00		39.1	19.0
50	DeSoto	2.00	156.25	35.75	6.50	21.20	1.00		42.1	17.9
9912	Lee-74	1.00	111.75	62.00	8.75	15.78	1.00		41.9	16.9
59	Will	2.00	135.25	35.00	5.00	20.40	1.00		42.7	19.3
36	Evans	2.00	163.25	29.00	5.00	14.43	1.00		39.8	22.1
14	Williams	1.00	158.00	27.25	5.75	19.35	1.00		42.9	18.5
61	Cumberland	2.00	131.00	32.00	6.00	23.60	1.00		42.7	21.5
54	Chippewa 64	2.00	147.50	32.50	5.75	15.10	1.00		42.8	19.1
19	Davis	1.00	119.75	38.00	6.50	18.15	2.00		43.0	19.0
62	York	2.00	127.50	57.50	5.25	21.33	1.00		41.0	16.2
60	Kent	2.00	132.00	32.00	6.00	19.15	1.00		42.9	19.3
51	Celest	2.00	139.25	44.50	6.50	22.13	1.00		42.5	18.1
	Grand mean	1.75	141.00	35.81	5.86	19.19	1.06			
	Standard error of cultivar mean		13.38	2.96	.32	.28				
	Coefficient of variation (%)		18.98	16.53	10.97	2.89				
	5% LSD Cultivar means (*****=ns)		*****	8.43	.92	.79				

Table 111. Experiment 941, 1980

Country: PAKISTAN
Region: ASIA
Latitude: 31° 19′ N
Longitude: 74° 5′ E
Zone: 10
Elevation: 225 m

Site: SW OF LAHORE ON MULTAN ROAD
Cooperator(s): J. R. LOCKMAN and G. J. THOMPSON

Date planted: February 17, 1981
Date harvested: May 1981
Soil type: fine silt loam, pH 7.5
Fertilizer used (kg/ha): N 24, P 26, K 21
Amount of moisture: 456 mm
Number of irrigations: 8(400 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
24	Mitchell	3415.69	46.00	111.75	3.75		85.00		63.50	1.25
21	Calland	3243.59	44.25	116.25	4.00		88.75		57.25	1.00
68	Amsoy 71	3229.74	44.50	110.00	4.00		90.00		50.25	1.00
14	Williams	3184.63	46.00	107.75	3.75		85.00		58.25	1.00
35	Crawford	3080.87	46.00	113.75	4.00		83.75		72.50	1.00
22	Franklin	2988.05	46.00	110.50	3.75		70.00		62.00	1.00
31	Elf	2956.07	46.00	114.25	4.00		91.25		39.75	1.00
23	Cutler 71	2934.61	45.50	111.50	4.00		90.00		61.25	1.00
33	Union	2911.38	46.00	105.50	3.50		82.50		62.50	1.00
29	Harcor	2894.92	45.25	104.00	3.50		95.00		43.50	1.00
66	Clark 63	2627.71	45.50	111.50	4.00		92.50		57.75	1.00
28	Steele	2470.09	47.00	95.00	4.00		90.00		39.50	1.00
34	Corsoy	2232.89	45.00	109.50	3.75		96.25		45.25	1.00
67	Woodworth	2144.65	45.75	107.50	4.00		82.50		53.50	1.00
38	McCall	2140.48	46.00	95.00	3.75		97.50		40.50	1.00
30	Hodgson	2048.60	44.00	98.75	3.75		75.00		38.00	1.00
	Grand mean	2781.50	45.55	107.66	3.84		87.19		52.83	1.02
	Standard error of cultivar mean	281.84	.23	.90	.19		7.28		1.32	.06
	Coefficient of variation (%)	20.27	1.02	1.67	9.74		16.69		4.98	12.31
	5% LSD Cultivar means (*****=ns)	802.79	.66	2.56	*****		*****		3.75	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
24	Mitchell	1.50	200.25	21.00	5.00	15.98	3.00		42.0	19.9
21	Calland	1.50	150.25	19.65	6.00	17.45	3.00		43.3	19.3
68	Amsoy 71	1.00	182.25	16.90	3.75	15.68	2.00		39.8	22.7
14	Williams	1.00	184.75	16.95	4.00	16.13	2.00		41.4	22.4
35	Crawford	1.00	134.75	24.50	4.75	14.05	2.75		42.6	21.3
22	Franklin	2.25	185.50	16.25	6.00	15.80	2.25		39.8	22.8
31	Elf	1.25	130.00	20.80	1.50	17.08	2.00		42.0	21.5
23	Cutler 71	1.25	130.50	19.90	4.50	16.15	2.75		42.1	21.8
33	Union	1.00	182.00	15.35	3.75	15.93	2.25		42.2	21.6
29	Harcor	1.00	213.00	18.25	3.50	14.73	2.00		42.0	21.1
66	Clark 63	1.00	128.75	20.85	3.50	16.23	2.25		42.8	23.0
28	Steele	1.00	205.00	15.25	4.50	13.83	1.50		42.1	22.3
34	Corsoy	1.00	130.00	18.70	2.50	16.13	2.25		42.1	22.7
67	Woodworth	1.00	72.50	22.95	2.75	15.53	2.00		40.9	22.7
38	McCall	1.00	196.50	16.25	3.00	12.25	2.00		38.2	22.9
30	Hodgson	1.00	192.75	17.00	5.00	14.23	2.75		39.8	22.9
	Grand mean	1.17	163.67	18.78	4.00	15.45	2.30			
	Standard error of cultivar mean	.14	19.38	1.50	.65	.35	.22			
	Coefficient of variation (%)	24.48	23.68	15.92	32.57	4.51	19.55			
	5% LSD Cultivar means (*****=ns)	.41	55.19	4.26	1.86	.99	.64			

Table 112. Experiment 942, 1980

Country: PAKISTAN
Region: ASIA
Latitude: 31° 19′ N
Longitude: 74° 5′ E
Zone: 10
Elevation: 225 m

Site: SW OF LAHORE ON MULTAN RD.
Cooperator(s): J. R. LOCKMAN, G. J. THOMPSON

Date planted: March 4 1981
Date harvested: June 1981
Soil type: fine silt loam, pH 7.5
Fertilizer used (kg/ha): N 23.48, P 26.0, K 21.0
Amount of moisture: 470 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
23	Cutler 71	2884.29	33.00	98.50	1.50		100.00		65.50	1.75
14	Williams	2793.87	33.00	93.75	1.50		98.75		53.75	1.00
33	Union	2626.56	32.50	93.00	1.50		96.25		61.75	1.00
38	McCall	2400.30	30.50	84.25	2.50		98.75		40.75	1.00
24	Mitchell	2387.07	33.25	111.25	2.00		100.00		68.50	1.00
29	Harcor	2321.02	30.25	92.50	1.50		100.00		43.75	1.00
31	Elf	2320.91	32.75	98.50	1.25		98.75		38.75	1.00
66	Clark 63	2319.77	32.75	95.75	1.75		96.25		59.75	1.00
68	Amsoy 71	2290.60	32.00	97.00	2.00		97.50		49.50	1.00
35	Crawford	2268.51	33.75	104.50	1.75		98.75		69.75	1.25
22	Franklin	2161.94	32.50	95.50	2.25		97.50		65.00	1.25
21	Calland	2157.26	32.00	106.75	1.75		100.00		59.00	1.00
28	Steele	2105.06	31.25	85.75	2.50		100.00		40.75	1.00
34	Corsoy	2012.87	30.00	94.00	1.25		92.50		41.50	1.00
30	Hodgson	1987.66	30.25	85.50	2.00		100.00		37.75	1.00
67	Woodworth	1569.19	33.00	95.25	2.75		71.25		51.75	1.00
	Grand mean	2287.93	32.05	95.73	1.86		96.64		52.97	1.08
	Standard error of cultivar mean	196.72	.38	1.15	.53		6.02		1.77	.11
	Coefficient of variation (%)	17.20	2.38	2.40	56.81		12.46		6.69	20.52
	5% LSD Cultivar means (*****=ns)	560.35	1.08	3.27	*****		*****		5.05	.32

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
23	Cutler 71	1.00	148.00	25.70	5.25	16.15	3.00		43.4	19.1
14	Williams	1.00	198.25	20.05	3.50	16.53	1.75		42.4	22.3
33	Union	1.00	162.50	20.05	3.75	16.28	2.00		43.0	20.8
38	McCall	1.00	169.50	18.80	3.00	13.70	1.25		38.3	24.4
24	Mitchell	1.00	171.00	27.15	3.25	14.28	4.50		44.2	17.7
29	Harcor	1.00	195.00	20.75	1.75	13.75	1.50		43.5	22.1
31	Elf	1.50	137.75	18.15	.75	16.53	2.00		43.4	21.3
66	Clark 63	1.00	140.75	23.40	2.00	15.78	2.50		42.4	22.7
68	Amsoy 71	1.25	141.50	22.35	2.50	15.85	2.25		42.8	21.4
35	Crawford	1.00	135.75	28.00	4.50	14.15	2.25		43.7	18.5
22	Franklin	2.00	172.25	22.40	3.50	15.58	2.75		40.3	21.2
21	Calland	1.00	127.50	29.05	4.25	16.53	2.50		45.2	17.3
28	Steele	1.00	151.50	17.35	2.00	16.15	1.50		42.6	22.5
34	Corsoy	1.00	176.50	19.45	2.00	16.53	2.00		43.7	21.1
30	Hodgson	1.00	199.00	19.35	2.50	15.25	2.00		41.4	22.7
67	Woodworth	1.25	54.50	31.15	1.00	15.68	2.00		41.8	22.5
	Grand mean	1.13	155.08	22.70	2.84	15.54	2.23			
	Standard error of cultivar mean	.11	12.36	2.08	.48	.45	.24			
	Coefficient of variation (%)	19.88	15.94	18.37	33.64	5.80	21.83			
	5% LSD Cultivar means (*****=ns)	.32	35.20	5.94	1.36	1.28	.69			

Table 113. Experiment 943, 1980

Country: PAKISTAN
Region: ASIA
Latitude: 31° 19′ N
Longitude: 74° 5′ E
Zone: 10
Elevation: 225 m

Site: SW OF LAHORE ON MULTAN ROAD
Cooperator(s): J. R. LOCKMAN, G. J. THOMPSON

Date planted: March 28, 1981
Date harvested: June 1981
Soil type: fine silt loam, pH 7.5
Fertilizer used (kg/ha): N 23.48, P26.0, K 21.0
Amount of moisture: 414 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
29	Harcor	1935.57	23.75	59.75	2.25		97.50		38.75	1.00
38	McCall	1902.44	23.25	73.75	3.00		100.00		41.25	1.00
28	Steele	1756.29	24.25	77.75	3.00		95.00		43.25	1.00
14	Williams	1683.05	25.00	84.25	3.00		100.00		52.75	1.00
33	Union	1676.59	25.50	87.75	3.00		100.00		58.00	1.00
65	Beeson 80	1622.32	25.00	90.00	3.00		100.00		52.25	1.00
67	Woodworth	1621.48	25.50	85.25	3.50		96.25		54.00	1.00
34	Corsoy	1610.34	24.25	90.50	2.75		98.75		39.75	1.00
30	Hodgson	1588.04	24.00	77.00	2.50		90.00		42.00	1.00
26	Altona	1573.88	24.00	69.25	2.50		98.75		45.25	1.00
66	Clark 63	1499.81	26.00	92.00	3.25		92.50		60.25	1.00
31	Elf	1390.84	26.00	97.50	3.00		92.50		41.00	1.00
23	Cutler 71	1369.59	26.00	97.25	3.50		98.75		70.75	1.25
68	Amsoy 71	1326.04	24.75	98.00	3.25		97.50		52.00	1.00
22	Franklin	1318.75	25.75	99.75	2.50		100.00		71.00	1.25
24	Mitchell	862.15	26.00	101.00	3.00		98.75		71.00	2.00
	Grand mean	1546.07	24.94	86.30	2.94		97.27		52.08	1.09
	Standard error of cultivar mean	159.85	.23	6.89	.49		2.11		1.96	.09
	Coefficient of variation (%)	20.68	1.82	15.97	33.33		4.35		7.53	16.34
	5% LSD Cultivar means (*****=ns)	455.32	.65	19.63	*****		6.02		5.59	.25

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
29	Harcor	1.00	160.25	22.20	1.75	14.10	2.25		44.7	18.6
38	McCall	1.00	156.00	16.80	5.50	14.18	2.50		39.9	22.7
28	Steele	1.00	158.00	16.05	3.50	15.38	3.50		45.1	18.8
14	Williams	1.00	135.25	21.35	4.25	14.15	3.50		42.6	18.1
33	Union	1.00	164.75	20.45	5.00	13.83	4.00		43.6	17.7
65	Beeson 80	1.00	168.25	16.85	5.50	16.58	4.00		45.1	18.2
67	Woodworth	1.00	128.25	21.45	3.75	13.73	4.00		44.0	17.8
34	Corsoy	1.25	169.00	19.10	2.00	14.30	3.25		43.9	20.4
30	Hodgson	1.50	147.75	16.35	4.75	15.23	3.25		43.7	19.6
26	Altona	1.00	145.25	14.80	6.50	13.70	3.25		41.9	20.6
66	Clark 63	1.00	145.25	23.40	3.50	12.10	4.00		44.3	18.1
31	Elf	1.00	142.25	70.20	.50	14.35	4.00		45.0	18.3
23	Cutler 71	1.00	146.25	27.30	4.75	13.75	4.50		47.3	16.9
68	Amsoy 71	1.00	155.00	21.95	2.50	14.70	4.00		44.3	19.4
22	Franklin	1.00	160.50	18.90	4.00	12.63	5.00		46.5	15.1
24	Mitchell	1.00	191.75	27.85	4.00	12.33	5.00		49.5	16.2
	Grand mean	1.05	154.61	23.44	3.86	14.06	3.75			
	Standard error of cultivar mean	.10	11.46	12.81	.63	.46	.30			
	Coefficient of variation (%)	18.58	14.82	109.32	32.39	6.48	16.09			
	5% LSD Cultivar means (*****=ns)	.28	*****	*****	1.78	1.30	.86			

Table 114. Experiment 324, 1981

Country: PAKISTAN
Region: ASIA
Latitude: 34° 46′ N
Longitude: 72° 21′ E
Zone: 11
Elevation: 890 m

Site: MINGORA DISTRICT SWAT
Cooperator(s): ZAR QURESH KHAN, MOHAMMAD RAHIM, SAYED BODSHAH

Date planted: June 3, 1981
Date harvested: September 1981
Soil type: sandy loam
Fertilizer used (kg/ha): N 25.0, P 25.0, K 25.0

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodgir
58	Williams 79	4212.14	36.00	103.00					93.25	1.25
72	Amcor	4094.08	35.50	95.75					85.25	1.00
50	DeSoto	4076.71	37.75	111.00					104.75	1.25
74	Pella	3993.37	33.75	95.75					97.75	1.00
73	Century	3889.20	30.50	95.00					73.50	1.00
57	Corsoy 79	3864.89	33.00	87.00					85.00	1.00
19	Davis	3847.53	65.25	128.75					95.75	3.50
51	Celest	3771.13	66.00	121.50					130.00	4.50
35	Crawford	3698.21	57.25	112.75					137.50	2.00
59	Will	3639.18	35.75	99.50					63.50	1.25
25	Bragg	3500.28	65.50	129.25					118.25	4.50
71	Hodgson 78	3479.44	36.50	90.00					65.00	1.00
38	McCall	3142.61	33.75	87.00					46.25	1.00
60	Kent	3083.58	36.75	108.25					115.75	2.50
36	Evans	2729.38	29.50	83.25					48.50	1.00
70	Hardin	2486.31	30.25	93.00					55.00	1.00
	Grand mean	3594.25	41.44	102.55					88.44	1.82
	Standard error of cultivar mean	146.18	2.31	.31					5.27	1.39
	Coefficient of variation (%)	8.13	11.16	.60					11.92	76.00
	5% LSD Cultivar means (*****=ns)	416.38	6.59	.88					15.01	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percer Oil
58	Williams 79	1.00	91.25	41.25	12.25	18.80	2.00	86.67	42.9	22.8
72	Amcor	1.00	100.00	44.25	14.00	17.95	2.00	95.00	39.8	19.8
50	DeSoto	1.00	99.25	39.75	13.25	17.47	2.00	93.33	40.8	21.2
74	Pella	1.00	96.50	33.50	13.50	20.82	2.00	90.00	39.8	21.4
73	Century	1.00	103.75	35.75	13.75	18.25	2.00	93.33	43.3	20.6
57	Corsoy 79	1.00	111.50	39.00	9.25	16.77	2.00	100.00	41.1	20.6
19	Davis	1.00 (2)	86.50	42.25	12.00	17.60	2.00	88.33	40.3	22.0
51	Celest	1.00	92.75	32.25	14.75	18.95	2.00 (3)	91.67	40.3	20.7
35	Crawford	1.00	76.25	48.50	13.25	19.35	3.00	76.67	42.0	20.1
59	Will	1.00	113.00	29.25	7.75	17.45	2.00	100.00	42.4	21.0
25	Bragg	1.00 (2)	82.25	33.50	14.25	20.20	1.00	81.67	35.8	21.9
71	Hodgson 78	1.00	95.75	30.50	9.50	18.85	2.00	93.33	41.1	23.0
38	McCall	1.00	96.50	34.25	9.75	15.42	3.00	90.00	39.4	22.3
60	Kent	1.00	79.75	33.75	12.50	18.05	3.00	76.67	42.7	21.5
36	Evans	1.00	106.25	25.75	8.00	17.17	2.00	98.33	41.7	22.9
70	Hardin	1.00	81.25	26.75	8.75	17.82	2.00	81.67	41.1	21.1
	Grand mean	1.00	94.53	35.64	11.66	18.18	2.13	89.79		
	Standard error of cultivar mean	0.00	5.12	2.15	.53	.23	.49	3.77		
	Coefficient of variation (%)	0.00	10.84	12.07	9.04	2.58	23.11	7.27		
	5% LSD Cultivar means (*****=ns)	0.00	14.60	6.12	1.50	.67	0.00	10.89		

Table 115. Experiment 762, 1980

Country: PANAMA
Region: MESO-AMERICA
Latitude: 9° 10′ N
Longitude: 79° 22′ W
Zone: 1
Elevation: 10 m

Site: RIO HATO
Cooperator(s): GASPAR SILVERA

Date planted: September 2, 1980
Date harvested: December 1980
Soil type: sand 54%, silt 16%, clay 30%, pH 5.5
Fertilizer used (kg/ha): P 45
Amount of moisture: 327 mm
Number of irrigations: 2 (amount not measured)
Substitute cultivars: Bayano and Baru

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
2	UFV-1	3765.34		107.00	3.50		82.50		42.50	1.25
40	IGH 24	3692.40		111.00	3.50		96.25		74.25	2.75
39	IGH 23	3252.73		109.00	3.00		91.25		77.50	2.00
43	Alamo	3163.13		107.00	3.00		87.50		44.50	1.50
9	Jupiter	3158.96		109.00	4.00		96.25		68.00	1.50
8	ICA Caribe	2911.00		113.00	3.00		87.50		96.00	2.75
41	UFV-1 (BP-2)	2873.49		107.00	3.50		91.25		80.25	1.50
252	Bayano	2635.94		115.00	4.00		90.00		118.25	3.25
1004	Baru	2544.26		113.00	2.50		98.75		105.00	3.75
16	Cobb	2519.25		108.00	4.00		92.50		30.50	1.00
7	ICA Tunia	2458.82		103.00	3.00		88.75		55.25	1.00
19	Davis	2242.95		99.00	3.50		92.50		25.75	1.00
13	Bossier	2196.27		97.00	2.50		90.00		31.00	1.25
14	Williams	1983.73		85.00	3.50		91.25		40.00	1.00
37	G 2120	1935.80		95.00	3.50		96.25		96.25	3.50
44	Foster	1854.54		101.00	4.00		97.50		24.75	1.00
	Grand mean	2699.29		104.94	3.38		91.88		63.11	1.88
	Standard error of cultivar mean	171.44		.73	.45		4.01		3.58	.23
	Coefficient of variation (%)	12.70		1.39	26.50		8.73		11.34	24.98
	5% LSD Cultivar means (*****=ns)	488.34		2.08	*****		*****		10.20	.67

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
2	UFV-1		221.50	30.00	10.83	19.03				
40	IGH 24		198.25	57.50	13.03	15.30				
39	IGH 23		186.75	34.00	12.30	17.58				
43	Alamo		202.00	32.25	8.25	17.20				
9	Jupiter		195.25	31.50	13.30	17.43				
8	ICA Caribe		179.00	50.50	10.88	13.68				
41	UFV-1 (BP-2)		193.75	37.25	13.00	16.48				
252	Bayano		123.50	52.00	16.50	19.55				
1004	Baru		177.00	58.75	13.80	17.75				
16	Cobb		182.25	36.25	6.98	20.05				
7	ICA Tunia		209.00	25.00	9.83	17.68				
19	Davis		166.25	24.75	7.90	19.83				
13	Bossier		194.50	23.50	7.10	18.23				
14	Williams		193.25	20.63	9.20	21.75				
37	G 2120		201.50	70.00	9.85	7.10				
44	Foster		183.50	28.25	8.20	17.48				
	Grand mean		187.95	38.26	10.68	17.25				
	Standard error of cultivar mean		12.76	5.38	1.07	.88				
	Coefficient of variation (%)		13.58	28.10	20.05	10.25				
	5% LSD Cultivar means (*****=ns)		36.35	15.31	3.05	2.52				

Table 116. Experiment 825, 1980

Country: PARAGUAY
Region: SOUTH AMERICA
Latitude: 25° 24′ S
Longitude: 57° 6′ W
Zone: 7
Elevation: 228 m

Site: CAACUPE
Cooperator(s): ROBERTO CASACCIA, JUSTO LOPEZ, O. AQUILERA, E. ALVAREZ

Date planted: November 5, 1980 Date harvested: February 1981
Soil type: sand 51.38%, silt 25.62%, clay 21.90%, pH 5.4
Fertilizer used (kg/ha): N 25.0, P 25.0, K 25.0
Amount of moisture: 831.7 mm
Substitute cultivars: Visoja and IAS 5

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodgin
47	PK-73-94	3450.69	55.00	176.00	2.50	2.25	81.25	76.25	50.75	1.00
2	UFV-1	3225.64	81.00	176.00	2.75	2.00	57.50	68.75	81.00	1.75
44	Foster	3125.62	48.00	160.00	2.75	2.25	85.00	78.75	35.00	1.00
19	Davis	2577.60	52.00	142.00	2.75	2.00	86.25	77.50	52.50	1.00
8250	IAS 5	2525.50	52.00	139.00	3.00	2.25	83.75	88.75	42.75	1.00
49	Centennial	2450.49	45.00	149.00	2.25	2.50	80.00	68.75	36.50	1.00
13	Bossier	2412.98	45.00	160.00	2.00	2.25	85.00	55.00	33.75	1.00
5631	Visoja	2317.13	70.00	163.50	3.00	2.00	61.25	71.25	49.00	1.00
43	Alamo	2317.13	81.00	176.00	3.25	2.00	68.75	60.00	73.75	1.75
52	Bay	2258.78	44.50	126.00	3.75	2.75	77.50	71.25	36.75	1.00
51	Celest	2079.58	45.00	126.00	3.25	2.75	67.50	56.25	45.25	1.00
37	G 2120	1892.04	81.00	149.00	2.50	1.75	70.00	70.00	102.25	3.00
50	DeSoto	1808.69	36.00	111.00	3.00	1.75	82.50	76.25	34.25	1.00
14	Williams	1571.15	36.00	111.00	2.75	2.25	87.50	76.25	36.00	1.00
48	Gail	1441.95	45.00	126.00	2.50	1.75	90.00	66.25	32.00	1.25
53	Ware	1146.06	36.00	111.00	3.75	2.75	78.75	70.00	23.50	1.00
	Grand mean	2287.57	53.28	143.84	2.86	2.20	77.66	70.70	47.81	1.23
	Standard error of cultivar mean	251.74	.63	3.13	.35	.29	4.25	6.11	2.71	.11
	Coefficient of variation (%)	22.01	2.35	4.34	24.29	26.06	10.95	17.28	11.33	17.41
	5% LSD Cultivar means (*****=ns)	717.06	1.78	8.90	.99	*****	12.11	17.41	7.72	.31

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percen Oil
47	PK-73-94	1.00	224.75	19.60	12.25	15.65	2.50	84.25	43.6	22.1
2	UFV-1	1.00	157.25	24.28	13.75	15.18	3.50	82.75	43.8	20.5
44	Foster	1.00	244.00	12.15	10.00	17.85	3.25	82.75	43.6	22.1
19	Davis	1.00	250.25	12.75	14.25	20.13	4.25	76.25	45.4	21.9
8250	IAS 5	1.00	249.25	13.25	14.75	19.35	2.25	98.75	42.7	23.4
49	Centennial	1.00	256.00	10.25	4.75	18.18	2.50	99.25	44.8	21.7
13	Bossier	1.00	168.00	16.93	6.25	18.90	3.00	94.75	45.7	21.0
5631	Visoja	1.00	159.00	22.58	8.75	15.48	3.00	75.00	44.4	21.8
43	Alamo	1.00	230.25	15.85	15.00	17.85	3.25	94.25	45.5	20.0
52	Bay	1.25	284.75	10.55	8.00	23.93	4.50	72.50	44.4	22.1
51	Celest	1.00	252.25	11.15	11.25	21.70	3.00	87.75	44.1	22.1
37	G 2120	1.00	232.00	37.33	16.50	8.03	3.00	99.75	46.3	15.9
50	DeSoto	1.00	259.25	8.08	6.25	23.70	3.25	87.00	44.1	22.6
14	Williams	1.00	242.50	8.95	7.25	22.55	3.50	86.75	44.4	22.3
48	Gail	1.25	198.50	12.13	4.75	23.55	3.25	69.00	47.6	17.7
53	Ware	1.00	256.00	6.33	5.00	26.85	4.50	68.50	47.0	19.2
	Grand mean	1.03	229.00	15.13	9.92	19.30	3.28	84.95		
	Standard error of cultivar mean	.09	12.62	2.78	1.25	.54	.47	5.66		
	Coefficient of variation (%)	16.56	11.02	36.80	25.10	5.55	28.67	13.32		
	5% LSD Cultivar means (*****=ns)	*****	35.94	7.93	3.55	1.53	1.34	16.12		

Table 117. Experiment 176, 1981

Country: PARAGUAY
Region: SOUTH AMERICA
Latitude: 25° 24′ S
Longitude: 56° 7′ W
Zone: 7
Elevation: 228 m
Site: CAACUPE
Cooperator(s): LU DEE WANG
Date planted: October 20, 1981
Date harvested: March 10, 1982
Soil type: pH 5.7
Fertilizer used (kg/ha): N 20.0, P 26.4, K 49.8
Amount of moisture: 827.6 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
41	UFV-1 (BP-2)	3825.71	55.00	188.00	3.67	2.33	66.67	41.67	203.47	4.67
12	Rillito	3785.48	42.00	142.00	3.67	1.00	98.33	38.33	98.20	1.33
19	Davis	3582.49	42.33	144.00	4.00	1.67	100.00	48.33	53.93	1.00
2	UFV-1	3559.77	65.00	187.00	4.00	3.00	98.33	36.67	85.90	2.00
40	IGH 24	3550.71	107.67	198.00	4.33	3.33	66.67	55.00	152.73	2.67
220	Missoes	3431.35	42.00	168.33	3.67	1.00	93.33	38.33	56.73	1.00
8	ICA Caribe	3358.67	105.00	209.00	4.00	2.33	95.00	60.00	179.03	4.67
215	San Luis	3353.39	61.00	174.33	4.00	1.00	100.00	45.00	63.80	1.00
43	Alamo	3183.03	91.00	182.00	4.00	4.00	100.00	45.00	100.20	2.33
219	Galaxia	3160.41	42.00	140.00	4.00	1.00	100.00	36.67	54.90	1.00
3	SJ-2	3149.96	57.00	174.00	3.67	3.00	100.00	31.67	123.63	4.67
10	Improved Pelican	3127.07	62.00	180.00	4.00	1.67	98.33	56.67	176.70	3.33
58	Williams 79	2884.02	31.00	97.00	4.00	2.33	85.00	28.33	55.13	1.00
9	Jupiter	2798.62	97.00	191.00	4.33	3.67	63.33	45.00	106.17	2.00
46	Ecuador 2	2781.83	64.00	183.00	4.00	3.67	100.00	35.00	178.03	2.67
16	Cobb	2755.33	42.00	165.00	4.00	1.67	98.33	33.33	48.40	1.00
15	Ransom	2556.62	37.67	147.00	3.00	1.00	91.67	13.33	37.17	1.00
37	G 2120	2384.42	88.00	165.00	4.00	2.33	100.00	38.33	136.43	4.67
44	Foster	1816.42	38.33	157.00	4.00	1.00	96.67	30.00	41.23	1.00
13	Bossier	1589.04	37.67	159.00	3.33	1.33	100.00	51.67	41.40	1.00
	Grand mean	3031.72	60.38	167.53	3.88	2.12	92.58	40.42	99.66	2.20
	Standard error of cultivar mean	354.27	.30	1.18	.36	.52	13.34	10.91	3.89	.42
	Coefficient of variation (%)	20.24	.85	1.22	16.14	42.46	24.95	46.74	6.76	32.73
	5% LSD Cultivar means (*****=ns)	1014.28	.85	3.37	*****	1.49	*****	*****	11.13	1.19

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
41	UFV-1 (BP-2)	1.00	130.33	205.83	23.77	12.97	1.67	91.67	38.4	22.5
12	Rillito	1.00	167.33	39.00	9.63	14.83	2.00	71.33	39.3	21.9
19	Davis	1.00	181.67	40.63	8.73	15.40	2.00	51.00	39.4	21.8
2	UFV-1	1.00	147.33	94.03	29.03	12.43	1.33	95.00	38.4	21.8
40	IGH 24	1.00	72.67	186.10	21.03	15.33	1.00	93.00	37.9	22.2
220	Missoes	1.00	145.00	63.87	9.13	21.07	1.67	76.67	39.8	21.2
8	ICA Caribe	1.00	75.33	152.00	31.20	14.03	1.00	74.33	42.8	19.9
215	San Luis	1.00	171.33	63.70	13.47	13.63	1.67	87.33	37.6	22.6
43	Alamo	1.00	135.00	79.80	28.87	15.77	1.33	90.67	40.8	21.6
219	Galaxia	1.00	185.00	55.33	7.13	14.87	1.67	77.33	38.2	21.6
3	SJ-2	1.00	106.00	240.00	18.00	12.93	2.00	94.33	39.8	22.1
10	Improved Pelican	1.00	106.67	206.30	23.50	12.87	1.67	98.33	40.1	21.1
58	Williams 79	1.00	197.33	26.80	7.77	19.40	1.00	42.67	40.1	21.7
9	Jupiter	1.00	64.67	146.30	24.10	18.50	2.00	97.00	38.2	21.1
46	Ecuador 2	1.00	60.67	222.27	25.07	13.43	2.00	96.33	40.2	21.7
16	Cobb	1.00	145.00	58.53	6.40	17.53	2.67	78.33	35.6	22.1
15	Ransom	1.00	167.00	30.50	6.53	17.00	3.67	53.33	38.2	21.4
37	G 2120	2.00	151.67	222.47	17.20	7.37	1.67	98.67	42.9	18.7
44	Foster	1.00	187.33	43.57	7.30	14.97	3.67	50.67	37.9	22.0
13	Bossier	1.00	186.67	39.03	7.37	16.57	4.33	69.00	40.2	22.1
	Grand mean	1.05	139.20	110.80	16.26	15.04	2.00	79.35		
	Standard error of cultivar mean	0.00	8.66	15.19	1.68	.69	.26	5.08		
	Coefficient of variation (%)	0.00	10.78	23.74	17.88	7.98	22.36	11.09		
	5% LSD Cultivar means (*****=ns)	0.00	24.80	43.48	4.81	1.98	.74	14.55		

Table 118. Experiment 199, 1981

Country: PARAGUAY
Region: SOUTH AMERICA
Latitude: 25° 24′ S
Longitude: 56° 7′ W
Zone: 7
Elevation: 228 m

Site: CAACUPE
Cooperator(s): LU DEE WANG

Date planted: January 12, 1981
Date harvested: April 22, 1982
Soil type: pH 4.9, OM 0.3%, P 29 ppm, K 29 ppm, yellow red podzolic
Fertilizer used (kg/ha): N 25.0, P 26.4, K 49.8
Amount of moisture: 467.5 mm
Substitute cultivar: San Luis

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodg
19	Davis	4699.38	62.67	150.33	5.67	5.33	133.33	105.33	80.30	2.0
16	Cobb	3823.15	42.00	112.00	4.00	4.00	100.00	91.67	46.20	1.0
40	IGH 24	3529.48	68.00	137.00	4.00	4.33	100.00	43.33	103.90	2.0
19	Davis	3405.35	43.00	109.67	4.00	4.00	100.00	100.00	54.70	1.0
215	San Luis	3234.54	44.00	112.00	3.33	4.33	100.00	65.00	60.37	1.0
43	Alamo	3206.92	60.00	119.00	4.00	4.33	100.00	29.00	74.50	3.0
15	Ransom	3198.08	38.00	103.67	3.33	4.00	100.00	93.00	41.50	1.0
44	Foster	3109.62	38.00	101.67	2.67	4.00	100.00	71.67	45.27	1.0
220	Missoes	3108.90	41.00	112.00	4.00	4.33	100.00	66.67	60.27	1.0
219	Galaxia	3068.11	41.00	101.00	4.33	4.00	100.00	81.67	46.90	1.0
2	UFV-1	3026.94	57.00	117.67	4.33	4.00	100.00	79.33	68.17	2.3
13	Bossier	2908.03	38.00	103.00	4.00	4.00	100.00	86.00	46.30	1.0
48	Gail	2844.68	37.00	101.00	4.00	4.00	100.00	81.00	45.07	1.0
43	Alamo	2771.39	63.00	119.00	4.33	4.00	100.00	77.00	80.23	3.0
13	Bossier	2707.87	38.00	103.00	4.00	4.00	100.00	100.00	48.83	1.0
10	Improved Pelican	2395.70	51.00	109.00	4.00	4.00	100.00	68.67	88.60	3.0
58	Williams 79	2322.02	35.00	100.33	4.00	4.00	100.00	87.00	51.03	1.0
12	Rillito	2314.02	43.00	106.00	4.33	4.00	100.00	61.67	66.13	1.0
37	G 2120	1994.40	67.00	115.33	4.00	4.00	100.00	45.00	109.10	4.3
9	Jupiter	1750.91	41.33	82.67	2.67	2.67	66.67	46.67	65.37	2.0
	Grand mean	2970.97	47.40	110.77	3.95	4.07	100.00	73.98	64.14	1.6
	Standard error of cultivar mean	0.00	0.00	0.00	0.00	0.00	0.00	14.62	5.63	.3
	Coefficient of variation (%)	0.00	0.00	0.00	0.00	0.00	0.00	34.22	15.20	32.2
	5% LSD Cultivar means (*****=ns)	0.00	0.00	0.00	0.00	0.00	0.00	41.84	16.12	.9

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Perce Oil
19	Davis	1.33	246.00	54.83	17.70	22.40	2.00	123.33	37.3	21.7
16	Cobb	1.00	157.00	39.77	8.87	17.10	3.00	78.00	37.0	21.9
40	IGH 24	1.00	171.33	48.73	18.87	14.60	1.67	96.67	35.3	21.7
19	Davis	1.00	192.00	38.00	9.17	17.80	1.33	83.00	37.5	21.9
215	San Luis	1.00	198.67	46.17	11.40	15.00	2.33	86.67	36.6	21.8
43	Alamo	1.00	174.00	51.90	14.90	13.77	1.67	95.33	37.4	21.7
15	Ransom	1.00	185.00	37.67	8.03	17.13	2.00	89.33	37.3	22.9
44	Foster	1.00	193.33	32.60	8.83	14.73	1.67	91.00	37.6	22.1
220	Missoes	1.00	171.00	40.77	12.97	19.30	2.00	90.00	39.8	20.1
219	Galaxia	1.00	149.67	39.13	8.03	15.50	1.67	95.00	37.7	21.9
2	UFV-1	1.00	195.33	47.00	17.80	16.47	2.33	97.00	36.7	21.6
13	Bossier	1.00	195.33	28.20	8.23	15.77	2.00	96.00	39.1	21.2
48	Gail	1.00	189.00	25.97	8.13	20.40	2.00	71.33	41.3	20.0
43	Alamo	1.00	186.00	48.97	21.80	14.17	2.00	90.33	38.7	21.3
13	Bossier	1.00	187.33	27.83	9.17	15.73	2.00	87.00	39.3	21.2
10	Improved Pelican	1.00	190.00	59.53	13.37	11.80	2.00	95.33	35.0	22.7
58	Williams 79	1.00	185.00	23.63	7.67	18.53	2.67	86.67	37.5	22.1
12	Rillito	1.00	197.00	27.77	9.73	14.80	2.33	95.00	38.3	21.2
37	G 2120	2.00	185.33	112.23	15.93	6.07	3.00	91.67	40.6	22.9
9	Jupiter	.67	118.33	30.37	17.40	11.33	2.00	63.67	35.5	22.9
	Grand mean	1.05	183.33	43.05	12.40	15.62	2.08	90.12		
	Standard error of cultivar mean	0.00	0.00	5.14	2.14	0.00	.28	0.00		
	Coefficient of variation (%)	0.00	0.00	20.69	29.87	0.00	23.06	0.00		
	5% LSD Cultivar means (*****=ns)	0.00	0.00	14.72	6.12	0.00	.79	0.00		

Table 119. Experiment 234, 1981

Country: PARAGUAY
Region: SOUTH AMERICA
Latitude: 25° 24′ S
Longitude: 57° 6′ W
Zone: 7
Elevation: 228 m

Site: CAACUPE
Cooperator(s): OSCAR AQUILERA, JUSTO LOPEZ, ROBERTO CASACCIA, BLAIR COOPER, EDGAR ALUAREZ

Date planted: October 26, 1981
Date harvested: February 1982
Soil type: sand 86.4%, silt 10%, clay 3.6% pH 5.8, podzolico rojo amarillo
Fertilizer used (kg/ha): N 25.0, P 25.0, K 25.0
Amount of moisture: 980.4 mm
Substitute cultivars: Parana and San Luis

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
19	Davis	2508.83	58.00	181.00	3.00		95.00		57.25	1.00
75	Braxton	2499.67	38.00	171.00	2.00		95.00		48.00	1.00
35	Crawford	2490.08	37.00	114.00	3.00		85.00		67.50	1.00
214	Parana	2261.29	58.00	146.00	3.75		91.25		45.00	1.00
2	UFV-1	2160.85	55.00	189.00	3.50		51.25		90.25	1.00
44	Foster	1991.23	40.00	181.00	3.25		86.25		37.25	1.00
52	Bay	1669.50	40.00	154.00	2.25		85.00		44.50	1.00
51	Celest	1605.32	55.00	135.00	3.50		73.75		56.50	1.00
49	Centennial	1563.23	55.00	171.00	2.75		85.00		31.50	1.00
48	Gail	1547.81	40.00	146.00	2.25		90.00		34.00	1.00
47	PK-73-94	1480.30	55.00	189.00	3.00		86.25		53.00	1.00
215	San Luis	1379.86	58.00	189.00	2.75		85.00		54.25	1.00
50	DeSoto	1190.65	42.00	114.00	3.00		81.25		52.00	1.00
43	Alamo	1171.90	55.00	189.00	3.25		78.75		83.25	1.00
58	Williams 79	955.61	38.00	114.00	3.00		68.75		53.25	1.00
53	Ware	492.60	38.00	136.00	3.25		71.25		22.25	1.00
	Grand mean	1685.55	47.62	157.44	2.97		81.80		51.86	1.00
	Standard error of cultivar mean	300.85	0.00	0.00	.34		7.78		3.19	0.00
	Coefficient of variation (%)	35.70	0.00	0.00	23.11		19.02		12.31	0.00
	5% LSD Cultivar means (*****=ns)	856.96	0.00	0.00	.98		22.15		9.09	0.00

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
19	Davis	1.00	109.75	43.50	7.00	22.77	3.75	31.00	42.9	23.1
75	Braxton	1.00	141.75	46.25	5.75	24.60	3.75	65.50	40.5	23.2
35	Crawford	1.00	70.50	63.50	6.00	17.70	2.25	95.75	41.8	24.0
214	Parana	1.00	114.00	46.25	9.00	22.07	1.75	84.50	40.9	24.4
2	UFV-1	1.00	163.00	77.25	12.25	18.72	4.50	96.75	43.0	22.5
44	Foster	1.00	133.75	40.00	5.25	21.07	4.50	58.50	40.3	23.5
52	Bay	1.00	121.00	26.75	5.75	22.62	5.00	35.50	39.0	25.3
51	Celest	1.00	113.75	39.50	10.75	22.25	2.50	76.75	43.0	22.9
49	Centennial	1.00	63.50	45.75	3.50	20.27	4.50	76.50	42.2	23.3
48	Gail	1.00	76.25	42.00	4.75	23.37	3.75	61.00	44.8	22.8
47	PK-73-94	1.00	222.00	55.00	9.75	23.15	4.75	85.00	42.6	23.4
215	San Luis	1.00	130.50	62.00	9.25	21.02	4.50	79.00	41.7	24.0
50	DeSoto	1.00	125.00	46.25	4.75	14.60	3.00	85.50	39.4	23.8
43	Alamo	1.00	144.50	39.50	25.75	18.02	4.75	81.00	43.3	23.9
58	Williams 79	1.00	116.00	31.75	4.25	14.52	3.25	90.50	42.4	23.7
53	Ware	1.00	169.00	13.25	3.50	26.95	4.25	32.00	43.1	23.2
	Grand mean	1.00	125.89	44.91	7.95	20.86	3.80	70.92		
	Standard error of cultivar mean	0.00	15.58	5.72	1.76	1.20	.29	7.03		
	Coefficient of variation (%)	0.00	24.76	25.47	44.22	11.53	15.43	19.83		
	5% LSD Cultivar means (*****=ns)	0.00	44.39	16.29	5.01	3.43	.83	20.03		

Table 120. Experiment 705, 1980

Country: PERU
Region: SOUTH AMERICA
Latitude: 11° 15′ S
Longitude: 75° 15′ W
Zone: 5
Elevation: 550 m
Site: PICHANAKI
Cooperator(s): CARLOS LOAYZA and LUIS CAMACHO
Date planted: April 9, 1980
Date harvested: July 1980

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
45	ICA L-109	896.01	37.75	92.75	2.75	4.00	87.50	76.25	44.00	2.25
9	Jupiter	881.43	27.25	93.50	2.75	4.00	85.00	70.00	47.00	2.00
15	Ransom	877.26	21.50	84.00	3.00	4.00	88.75	66.25	28.85	1.50
7	ICA Tunia	852.25	24.75	89.75	2.75	4.00	93.75	68.75	32.50	2.75
3	SJ-2	848.09	27.00	86.75	2.75	4.00	91.25	73.75	35.75	3.00
2	UFV-1	770.99	28.00	87.25	2.75	4.00	88.75	63.75	34.20	2.25
10	Improved Pelican	723.06	27.75	84.25	2.75	3.75	88.75	70.00	45.75	1.00
19	Davis	662.63	25.50	80.50	3.00	3.75	90.00	65.00	28.25	1.75
14	Williams	652.21	24.75	79.00	2.75	3.50	87.50	65.00	29.85	1.75
16	Cobb	637.63	22.00	79.50	3.00	4.00	83.75	63.75	26.05	1.50
43	Alamo	616.79	31.50	89.25	3.25	4.00	78.75	67.50	35.50	2.00
37	G 2120	614.71	23.00	85.25	3.50	4.00	73.75	62.50	47.85	3.00
63	Hutton	593.87	23.50	82.00	3.25	3.50	78.75	63.75	24.95	1.75
13	Bossier	558.44	22.00	79.25	3.50	4.00	80.00	63.75	23.03	1.50
8	ICA Caribe	518.85	26.75	88.50	3.50	4.00	81.25	61.25	45.25	2.25
44	Foster	479.26	21.75	81.50	2.75	3.50	82.50	66.25	34.30	1.00
	Grand mean	698.97	25.92	85.19	3.00	3.88	85.00	66.72	35.19	1.95
	Standard error of cultivar mean	134.13	1.00	1.28	.37	.20	6.16	4.77	4.28	.41
	Coefficient of variation (%)	38.38	7.72	3.02	24.78	10.54	14.49	14.29	24.34	42.12
	5% LSD Cultivar means (*****=ns)	*****	2.85	3.66	*****	*****	*****	*****	12.20	1.17

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
45	ICA L-109	2.00	118.00	93.25	13.05	10.75	3.00	63.50		
9	Jupiter	3.25	183.50	79.25	15.35	14.75	2.25	89.50		
15	Ransom	2.25	227.00	46.75	10.55	14.75	2.25	86.50		
7	ICA Tunia	2.50	181.00	61.00	11.80	15.75	3.00	70.00		
3	SJ-2	2.25	213.25	76.25	11.65	13.50	2.00	92.50		
2	UFV-1	1.50	254.00	51.25	11.60	12.25	2.00	84.50		
10	Improved Pelican	2.50	174.75	75.25	13.25	11.75	2.75	94.50		
19	Davis	2.25	169.00	57.25	10.20	14.00	2.75	84.00		
14	Williams	2.25	211.25	53.75	10.80	16.25	3.00	89.00		
16	Cobb	3.00	199.00	63.50	9.65	14.00	2.75	89.00		
43	Alamo	2.25	154.50	53.75	14.80	10.00	2.50	90.50		
37	G 2120	2.75	242.25	107.00	13.90	7.75	2.00	93.50		
63	Hutton	2.00	197.75	53.50	10.30	15.00	2.50	87.00		
13	Bossier	2.75	170.50	70.25	7.90	13.25	2.00	84.00		
8	ICA Caribe	2.75	206.50	95.50	12.75	13.00	2.00	93.00		
44	Foster	2.25	170.75	54.50	11.90	10.75	2.50	87.00		
	Grand mean	2.41	192.06	68.25	11.84	12.97	2.45	86.13		
	Standard error of cultivar mean	.35	20.36	12.16	1.16	.70	.20	2.36		
	Coefficient of variation (%)	29.18	21.20	35.65	19.55	10.82	16.45	5.48		
	5% LSD Cultivar means (*****=ns)	*****	58.00	34.65	3.30	2.00	.57	6.72		

able 121. Experiment 707, 1980

Country: PERU
Region: SOUTH AMERICA
Latitude: 9° S
Longitude: 75° W
Zone: 2
Elevation: 600 m

Site: TULUMAYO EXP. STATION, TINGO MARIA
Cooperator(s): JOSE ISIDRO MORALES GONZALES

Date planted:
Date harvested:

Entry umber	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
3	SJ-2	2792.75	40.00	109.00	1.00	2.75	98.75	15.00	68.60	1.50
7	ICA Tunia	2784.75	38.00	108.00	1.25	2.75	87.50	27.50	71.60	1.25
19	Davis	2552.00	37.00	105.00	1.00	2.25	87.50	21.25	37.23	1.25
45	ICA L-109	2276.50	38.50	101.00	1.25	3.00	96.25	25.00	68.10	1.50
14	Williams	2246.75	38.50	96.00	1.25	3.25	82.50	10.00	49.30	1.00
44	Foster	2190.25	37.00	91.00	1.00	3.00	92.50	15.00	21.38	1.00
2	UFV-1	2100.25	41.50	108.00	1.00	2.75	97.50	13.75	40.83	1.00
9	Jupiter	2026.25	40.00	107.00	1.25	3.00	83.75	16.25	67.95	1.00
37	G 2120	1993.00	57.25	105.00	1.25	2.75	85.00	15.00	107.00	3.50
8	ICA Caribe	1978.75	41.00	105.00	1.00	3.25	96.25	8.75	62.35	1.50
43	Alamo	1972.50	41.00	109.00	1.50	4.00	92.50	12.50	55.18	2.75
10	Improved Pelican	1722.00	41.00	104.00	1.00	2.50	93.75	8.75	79.75	2.00
15	Ransom	1612.75	37.00	103.00	1.50	2.25	86.25	42.50	26.40	1.00
13	Bossier	1600.75	35.25	101.00	1.00	3.00	97.50	15.00	24.20	1.25
16	Cobb	1569.50	34.75	103.00	1.00	2.75	92.50	9.25	31.73	1.00
63	Hutton	1386.50	39.50	104.00	1.00	2.75	96.25	18.75	25.43	1.00
	Grand mean	2050.33	39.83	103.69	1.14	2.88	91.64	17.14	52.31	1.47
	Standard error of cultivar mean	202.41	.65	1.24	.18	.38	3.61	5.06	2.50	.34
	Coefficient of variation (%)	19.74	3.27	2.40	31.21	26.63	7.87	58.99	9.55	45.74
5%	LSD Cultivar means (*****=ns)	576.54	1.86	3.54	*****	*****	10.28	14.40	7.12	.96

Entry umber	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
3	SJ-2	1.25	107.50	39.88	12.15	25.00	2.00	98.50		
7	ICA Tunia	1.00	127.50	32.35	10.73	26.25	2.75	91.75		
19	Davis	1.00	147.50	23.98	8.15	23.75	3.00	98.75		
45	ICA L-109	1.00	111.75	47.15	10.18	17.00	2.75	90.75		
14	Williams	1.00	125.00	28.28	7.58	22.75	3.00	95.00		
44	Foster	1.00	142.00	18.83	6.20	20.75	4.25	95.75		
2	UFV-1	1.00	122.50	33.65	8.38	23.00	2.25	94.50		
9	Jupiter	1.00	107.25	39.68	9.10	25.50	3.00	88.75		
37	G 2120	1.00	130.50	112.40	9.65	9.00	2.75	98.25		
8	ICA Caribe	1.00	125.75	35.30	7.93	19.50	2.50	98.00		
43	Alamo	1.00	136.75	32.88	9.48	20.25	2.00	96.75		
10	Improved Pelican	1.00	117.50	39.63	10.70	20.00	2.25	92.25		
15	Ransom	1.00	126.25	20.83	7.00	23.25	5.00	93.75		
13	Bossier	1.00	124.75	24.80	4.93	22.50	4.75	94.75		
16	Cobb	1.00	139.00	20.10	7.70	22.75	5.00	90.50		
63	Hutton	1.00	105.00	21.95	6.68	29.25	4.75	93.50		
	Grand mean	1.02	124.78	35.73	8.53	21.91	3.25	94.47		
	Standard error of cultivar mean	.06	8.30	7.74	.57	.84	.39	2.62		
	Coefficient of variation (%)	12.31	13.30	43.33	13.33	7.66	23.78	5.55		
5%	LSD Cultivar means (*****=ns)	*****	23.64	22.05	1.62	2.39	1.10	*****		

Table 122. Experiment 742, 1980

Country: PERU
Region: SOUTH AMERICA
Latitude: 4° 51′ S
Longitude: 80° 43′ W
Zone: 1
Elevation: 80 m

Site: MARCAVELICA SULLANA: PIURA
Cooperator(s): GONZALO A. DEL RIO E.

Date planted: August 8, 1980
Date harvested: November 1980
Soil type: sand 23.79%, silt 51.56%, clay 24.6%, pH 7.50
Amount of moisture: 600 mm
Substitute cultivar: Nacional

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
9	Jupiter	1677.25	33.50	118.00	2.00	1.75	32.50	77.50	66.00	1.75
39	IGH 23	1636.00	50.50	125.50	3.00	2.25	33.75	83.75	86.75	2.25
43	Alamo	1599.75	46.50	118.00	1.00	2.75	53.75	83.75	55.00	2.00
7	ICA Tunia	1521.75	30.00	111.25	3.00	1.75	36.25	85.00	47.75	2.75
2	UFV-1	1469.50	36.50	115.00	3.00	2.00	46.25	82.50	39.00	1.75
41	UFV-1 (BP-2)	1441.75	30.00	103.00	2.00	2.75	55.00	88.75	53.75	2.00
10	Improved Pelican	1384.00	33.00	98.25	1.00	3.50	46.25	93.75	54.75	2.75
19	Davis	1369.00	32.75	112.00	3.00	2.75	50.00	81.25	36.75	1.25
4290	Nacional	1345.25	51.00	118.00	3.00	2.25	57.50	86.25	91.50	3.75
37	G 2120	1294.25	52.50	120.25	2.00	1.00	46.25	75.00	105.00	3.75
8	ICA Caribe	1226.25	28.00	98.50	3.00	2.00	66.25	81.25	34.00	1.50
40	IGH 24	1078.75	48.00	128.75	2.00	2.00	45.00	66.25	76.75	1.50
14	Williams	1010.75	26.00	91.75		3.50	25.00	65.00	27.00	2.25
64	ICA L-125	882.00	28.50	106.00	1.00	1.50	30.00	57.50	53.50	1.75
63	Hutton	877.75	25.25	91.75	1.00	3.50	30.00	93.75	21.00	1.00
44	Foster	774.50	23.75	91.75	3.00	2.50	40.00	80.00	21.00	1.00
	Grand mean	1286.78	35.98	109.23	2.06	2.36	43.36	80.08	54.34	2.06
	Standard error of cultivar mean	162.51	1.44	2.35	.90	.62	15.19	10.59	3.97	.32
	Coefficient of variation (%)	25.26	7.99	4.30	87.11	52.75	70.06	26.44	14.60	30.98
	5% LSD Cultivar means (*****=ns)	462.90	4.09	6.69	*****	*****	*****	*****	11.30	.91

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
9	Jupiter	1.00	237.75	22.75	12.75	17.68				
39	IGH 23	2.25	237.00	29.25	23.00	15.63				
43	Alamo	1.00	252.00	21.25	11.50	14.45				
7	ICA Tunia	1.50	212.00	18.75	7.50	18.20				
2	UFV-1	1.75	225.75	19.25	6.50	13.18				
41	UFV-1 (BP-2)	1.25	280.75	19.75	7.75	14.05				
10	Improved Pelican	1.00	278.50	21.75	10.00	13.65				
19	Davis	1.00	236.00	19.75	6.00	17.73				
4290	Nacional	2.25	219.75	23.00	23.50	20.70				
37	G 2120	2.50	210.50	49.00	7.75	6.98				
8	ICA Caribe	2.25	262.00	25.50	4.75	14.23				
40	IGH 24	1.25	231.50	31.00	15.25	13.20				
14	Williams	1.00	249.00	13.50	6.00	17.53				
64	ICA L-125	1.50	195.00	22.00	9.00	12.98				
63	Hutton	1.00	222.50	17.50	5.00	16.23				
44	Foster	1.00	236.75	13.75	4.75	14.43				
	Grand mean	1.47	236.67	22.98	10.06	15.05				
	Standard error of cultivar mean	.32	13.31	2.15	1.09	.96				
	Coefficient of variation (%)	43.58	11.25	18.70	21.73	12.80				
	5% LSD Cultivar means (*****=ns)	.91	37.91	6.12	3.11	2.74				

Table 123. Experiment 161, 1981

Country: PERU
Region: SOUTH AMERICA
Latitude: 5° 40′ S
Longitude: 90° W
Zone: 1
Elevation: 500 m

Site: HUARANGOPAMPA: BAGUA
Cooperator(s): CESAR ARCAYA MAEEDA, AMERICO CELADEA B., RODOLFO VARGAS SACO

Date planted: October 12, 1981
Date harvested: January 1982
Soil type: sand 14%, silt 54%, clay 32%, pH 7.6
Number of irrigations: 7 (224.8 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
19	Davis	3493.20	31.00	136.75	3.50	2.00	92.50	91.25	34.00	1.00
58	Williams 79	3218.14	29.00	96.00	3.00	2.50	83.75	87.50	58.25	1.00
7	ICA Tunia	3068.53	32.00	122.00	3.00	2.25	98.75	91.25	73.50	3.00
44	Foster	2859.74	28.00	127.00	2.75	2.25	88.75	85.00	30.75	1.00
2	UFV-1	2706.37	37.00	131.00	3.00	3.00	92.50	86.25	47.50	1.00
13	Bossier	2405.90	28.00	128.00	3.75	2.75	96.25	97.50	34.25	1.00
46	Ecuador 2	2367.97	37.00	122.00	3.25	2.25	98.75	86.25	65.25	1.00
10	Improved Pelican	2304.63	37.00	122.00	2.75	2.75	96.25	90.00	95.25	5.00
9	Jupiter	2271.70	44.00	122.00	2.00	2.50	95.00	71.25	71.50	3.00
3	SJ-2	2256.70	37.00	122.00	3.00	2.75	93.75	91.25	82.25	5.00
43	Alamo	2156.26	39.00	117.00	4.00	2.50	96.25	87.50	58.00	1.00
39	IGH 23	1964.98	44.00	131.00	2.50	2.00	96.25	73.75	88.00	1.00
41	UFV-1 (BP-2)	1921.22	32.00	136.00	3.50	2.00	87.50	83.75	95.25	4.25
37	G 2120	1476.96	45.25	128.75	1.75	1.50	92.50	81.25	129.75	5.00
40	IGH 24	865.59	45.00	136.00	1.50	2.00	92.50	75.00	88.25	3.00
8	ICA Caribe	180.04	37.00	138.00	3.25	3.00	100.00	86.25	110.25	3.00
	Grand mean	2219.87	36.39	125.97	2.91	2.37	93.83	85.31	72.62	2.45
	Standard error of cultivar mean	152.15	.33	.56	.30	.28	2.92	3.69	3.19	.06
	Coefficient of variation (%)	13.71	1.81	.89	20.80	23.59	6.23	8.65	8.79	5.10
	5% LSD Cultivar means (*****=ns)	433.39	.94	1.60	.86	.80	8.33	10.52	9.09	.18

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
19	Davis	1.75	165.00	44.50	6.25	18.23	2.00			
58	Williams 79	1.00	234.00	21.75	8.25	18.87	2.00			
7	ICA Tunia	1.00	289.50	25.50	11.75	19.07	3.00			
44	Foster	1.00	298.75	19.25	8.00	14.37	2.00			
2	UFV-1	1.00	324.75	30.50	11.50	13.92	3.00			
13	Bossier	1.00	296.50	28.00	7.50	15.22	3.00			
46	Ecuador 2	1.00	257.75	37.00	12.75	15.32	4.00			
10	Improved Pelican	2.00	304.25	35.25	13.75	16.02	3.00			
9	Jupiter	1.00	200.75	37.00	10.50	20.90	3.00			
3	SJ-2	1.00	270.00	47.75	10.50	14.67	3.00			
43	Alamo	1.00	250.75	32.75	11.75	14.75	3.00			
39	IGH 23	2.00	324.25	44.50	12.00	18.57	3.00			
41	UFV-1 (BP-2)	1.00	306.25	43.75	12.25	15.62	4.00			
37	G 2120	4.00	386.75	80.75	12.25	8.20	3.00			
40	IGH 24	1.00	264.25	49.75	8.25	15.20	5.00			
8	ICA Caribe	3.00	319.50	46.50	9.50	8.55	4.00			
	Grand mean	1.48	280.81	39.03	10.42	15.47	3.12			
	Standard error of cultivar mean	.06	14.26	4.20	.86	.44	0.00			
	Coefficient of variation (%)	8.42	10.16	21.53	16.53	5.66	0.00			
	5% LSD Cultivar means (*****=ns)	.18	40.63	11.97	2.45	1.25	0.00			

Table 124. Experiment 182, 1981

Country: PERU
Region: SOUTH AMERICA
Latitude: 12° 5′ S
Longitude: 76° 57′ W
Zone: 4
Elevation: 251 m

Site: LA MOLINA, ESTACION EXPERIMENTAL
Cooperator(s): RUFINO MONTALVO, LUIS H. CAMACHO

Date planted: January 11, 1982
Date harvested: April 1982
Soil type: sand 36%, silt 40%, clay 24.0%, pH 8.2
Amount of moisture: 510 mm
Substitute cultivars: Cobb, Ransom, Mandarin S4-ICA, MV-1

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
40	IGH 24	3222.31	51.50	141.00	4.00		55.00 (2)		79.25	1.00
41	UFV-1 (BP-2)	2681.79	34.75	109.25	3.50	1.50	47.50	33.33 (3)	85.00	1.00
8	ICA Caribe	2648.03	40.75	109.75	4.50	1.00	47.50 (2)	76.25	80.50	2.50
43	Alamo	2538.01	45.00	114.25	3.00	1.50	31.25	41.67 (3)	60.75	1.00
2	UFV-1	2507.17	35.25	112.25	4.25	1.00	36.67 (3)	68.75	60.50	1.00
228	Mandarin S4-ICA	2447.16	36.50	115.50	4.00	1.25	26.25	58.75	75.75	1.75
9	Jupiter	2442.99	51.50	130.50	4.00	1.25	33.75	48.75	76.50	1.00
19	Davis	2175.43	31.50	103.00	4.00	1.00	57.50 (2)	91.25	44.00	1.00
15	Ransom	2037.49	19.75	95.00	3.00	2.25	58.75	10.00 (1)	34.50	1.00
3	SJ-2	1977.90	38.00	103.50	4.25	1.25	36.67 (3)	35.00 (3)	87.50	1.50
44	Foster	1844.12	20.75	93.75	3.50	1.50	38.75	85.00	34.00	1.00
227	MV-1	1677.84	30.00	102.00	3.75	1.50	51.67 (3)	42.50	43.00	1.00
37	G 2120	1654.08	54.00	112.50	4.00	1.25	62.50 (2)	53.75	106.50	3.75
13	Bossier	1636.16	20.00	96.25	3.50	1.75	48.75	96.25	32.50	1.00
16	Cobb	1533.22	20.75	83.50	3.50	1.25	67.50	96.25	40.00	1.00
58	Williams 79	1365.27	19.50	85.25	4.25	2.00	21.67 (3)	83.75	39.00	1.00
	Grand mean	2149.31	34.34	106.70	3.81	1.42	44.13	65.65	61.20	1.34
	Standard error of cultivar mean	223.01	.73	.95	.40	.41	26.69	31.23	2.77	.16
	Coefficient of variation (%)	20.75	4.22	1.77	21.19	57.36	60.48	47.58	9.07	24.34
	5% LSD Cultivar means (*****=ns)	635.24	2.07	2.70	*****	*****	*****	*****	7.90	.47

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
40	IGH 24	1.00	252.00	49.30	18.50	15.50	1.75	99.50	30.8	23.2
41	UFV-1 (BP-2)	1.00	275.25	35.30	14.75	13.00	1.50	92.75	33.2	23.3
8	ICA Caribe	1.50	307.50	53.80	15.00	11.50	2.00	97.75	39.7	20.2
43	Alamo	1.00	223.50	28.30	12.75	13.25	2.25	96.00	34.2	23.2
2	UFV-1	1.00	303.50	26.75	14.00	13.25	1.75	94.25	34.8	23.4
228	Mandarin S4-ICA	1.00	117.25	49.60	15.50	16.25	1.50	91.50	36.8	21.2
9	Jupiter	1.00	164.25	28.75	16.75	17.75	1.50	98.00	35.2	22.4
19	Davis	1.00	167.75	21.45	10.75	15.50	2.25	79.25	35.1	22.8
15	Ransom	1.00	227.00	19.15	8.50	16.00	3.25	69.75	32.2	23.7
3	SJ-2	1.00	218.25	29.15	16.00	11.00	2.00	93.00	33.7	22.3
44	Foster	1.00	295.25	16.20	10.75	15.50	3.00	53.75	36.2	23.0
227	MV-1	1.00	237.25	31.60	10.50	12.50	2.50	78.25	30.8	23.8
37	G 2120	1.00	420.50	74.60	23.75	6.00	2.00	97.75	38.5	19.3
13	Bossier	1.00	223.25	23.35	8.50	15.50	2.75	75.25	36.9	22.4
16	Cobb	1.00	263.00	13.35	7.50	15.25	2.00	98.00	33.5	23.6
58	Williams 79	1.00	195.00	13.10	6.50	15.75	2.00	96.75	34.2	23.7
	Grand mean	1.03	243.16	32.11	13.12	13.97	2.12	88.22		
	Standard error of cultivar mean	.07	20.50	6.62	1.15	.66	.21	2.85		
	Coefficient of variation (%)	14.00	16.86	41.26	17.57	9.50	19.37	6.46		
	5% LSD Cultivar means (*****=ns)	.21	58.39	18.87	3.28	1.89	.59	8.11		

Table 125. Experiment 722, 1980

Country: PHILIPPINES
Region: ASIA
Latitude: 14° 10′ N
Longitude: 121° 15′ E
Zone: 4
Elevation: 15 m

Site: BPI ECONOMIC GARDEN
Cooperator(s): BENJAMIN M. LEGASPI

Date planted: June 13, 1980
Date harvested: September 1980
Soil type: sand 17.1%, silt 38.7%, clay 44.2%, pH 5.4
Fertilizer used (kg/ha): N 56.0, P 24.4, K 46.6
Amount of moisture: 1163.2 mm
Substitute cultivars: VLCS-12A, TK-5

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
7722	VLCS-12A	1995.40	36.00	99.25	3.00	1.75	100.00	91.25	84.10	1.00
14	Williams	1959.98	23.00	91.00	2.50	2.75	100.00	91.25	73.95	1.00
7	ICA Tunia	1953.31	32.00	99.25	3.00	2.00	100.00	93.75	92.30	1.00
44	Foster	1805.36	28.00	99.50	2.75	2.25	100.00	91.25	42.00	1.00
7723	TK-5	1786.19	33.00	86.50	2.75	2.50	100.00	97.50	75.30	2.00
37	G 2120	1650.75	53.00	105.00	3.00	3.25	100.00	51.25	119.60	3.00
63	Hutton	1584.90	28.00	105.25	2.75	2.75	100.00	88.75	53.40	1.00
19	Davis	1245.67	30.00	91.00	2.50	3.25	100.00	95.00	57.55	1.00
41	UFV-1 (BP-2)	1177.32	34.00	109.75	2.75	2.25	100.00	91.25	135.80	3.00
16	Cobb	1083.55	28.00	99.50	2.50	2.75	100.00	96.25	42.95	1.00
2	UFV-1	1063.55	40.00	113.00	2.75	1.50	100.00	87.50	68.28	1.00
43	Alamo	938.94	49.00	110.50	3.50	2.50	100.00	87.50	64.25	1.75
45	ICA L-109	790.16	50.00	114.00	3.00	1.75	100.00	51.25	97.95	2.00
9	Jupiter	590.53	42.00	112.00	3.25	3.25	100.00	66.25	81.80	1.50
	Grand mean	1401.83	36.14	102.54	2.86	2.46	100.00	84.29	77.80	1.52
	Standard error of cultivar mean	122.14			.22	.26		4.73	3.69	.15
	Coefficient of variation (%)	17.43			15.05	20.84		11.23	9.48	19.48
	5% LSD Cultivar means (*****=ns)	349.39			*****	.73		13.53	10.55	.42

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
7722	VLCS-12A		110.25	39.25	19.85	12.88	2.00			
14	Williams		161.75	27.50	16.90	17.50	3.75			
7	ICA Tunia		121.50	40.00	20.25	12.75	2.00			
44	Foster		153.75	41.25	8.95	11.63	2.50			
7723	TK-5		162.50	43.50	7.10	14.38	2.25			
37	G 2120		192.00	118.25	15.45	4.63	2.00			
63	Hutton		114.50	45.00	7.60	13.75	2.25			
19	Davis		144.50	42.50	14.80	13.00	4.00			
41	UFV-1 (BP-2)		110.25	57.75	16.85	8.88	2.00			
16	Cobb		92.00	40.60	10.05	14.25	3.00			
2	UFV-1		116.25	49.00	10.80	10.25	2.00			
43	Alamo		130.75	38.00	17.35	10.88	2.25			
45	ICA L-109		109.50	84.10	15.75	7.00	3.00			
9	Jupiter		118.50	35.75	12.25	10.50	2.75			
	Grand mean		131.29	50.18	13.85	11.59	2.55			
	Standard error of cultivar mean		9.09	6.77	1.85	.37	.08			
	Coefficient of variation (%)		13.85	26.97	26.66	6.39	6.21			
	5% LSD Cultivar means (*****=ns)		26.00	19.35	5.28	1.06	.23			

Table 126. Experiment 774, 1980

Country: PHILIPPINES
Region: ASIA
Latitude: 14° 13′ N
Longitude: 121° 15′ E
Zone: 4
Elevation: 23 m

Site: LOS BANOS, LAGUNA
Cooperator(s): R. E. FUROC, R. A. MORRIS and J. W. PENDLETON

Date planted: November 27, 1980 Date harvested: February 1981
Soil type: lithic vertic tropaquept, sand 14%, silt 40%, clay 46%, pH 6.4
Fertilizer used (kg/ha): N 25, P 25, K 25
Number of irrigations: 2 (20 mm)
Substitute cultivar: UPL SY-2

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
3	SJ-2	2537.87	25.00	85.00	4.00	4.00	63.75	78.75	63.58	2.00
37	G 2120	2431.05	37.00	84.50	4.00	3.00	53.75	71.25	91.63	2.00
7774	UPL SY-2	2384.55	24.00	76.00	4.00	4.00	60.00	80.00	48.23	1.00
14	Williams	2352.85	20.00	77.50	4.00	3.50	53.75	63.75	44.18	1.00
41	UFV-1 (BP-2)	2339.55	23.00	85.00	4.00	3.75	56.25	76.25	68.23	1.50
7	ICA Tunia	2287.00	23.00	86.25	4.00	3.50	66.25	75.00	56.30	1.00
81	Ecuador 1	2239.47	30.00	87.00	4.00	3.25	63.75	73.75	59.95	2.00
19	Davis	2233.77	23.00	83.75	4.00	4.00	56.25	80.00	30.25	1.00
43	Alamo	2227.20	34.00	88.75	4.00	4.00	65.00	76.25	46.28	1.00
40	IGH 24	2165.50	36.00	92.25	4.00	4.00	63.75	80.00	79.38	2.00
9	Jupiter	2087.80	26.25	87.00	4.00	4.00	62.50	71.25	62.35	1.50
44	Foster	2060.02	19.00	76.00	4.00	2.75	52.50	73.75	29.28	1.00
64	ICA L-125	1988.42	28.00	87.00	4.00	4.00	67.50	77.50	72.90	1.75
2	UFV-1	1961.02	25.00	81.75	4.00	3.50	62.50	82.50	37.15	1.00
39	IGH 23	1754.65	33.00	88.50	4.00	4.00	65.00	81.25	75.60	2.00
8	ICA Caribe	1623.77	27.00	83.00	4.00	3.75	65.00	76.25	51.43	1.00
	Grand mean	2167.16	27.08	84.33	4.00	3.69	61.09	76.09	57.29	1.42
	Standard error of cultivar mean	112.31	.06	.67		.31	4.63	5.51	2.96	.11
	Coefficient of variation (%)	10.36	.46	1.59		17.03	15.16	14.49	10.34	16.00
	5% LSD Cultivar means (*****=ns)	319.89	.18	1.91		*****	*****	*****	8.44	.32

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
3	SJ-2	1.00	195.25	37.00	11.68	14.33	1.00	90.25		
37	G 2120	1.00	192.00	61.50	11.93	9.80	1.00	92.00		
7774	UPL SY-2	1.00	194.50	26.50	7.88	19.28	1.00	87.00		
14	Williams	1.00	192.75	17.75	10.85	18.58	1.25	95.00		
41	UFV-1 (BP-2)	1.00	197.00	31.75	15.63	13.85	1.00	96.25		
7	ICA Tunia	1.00	188.25	26.50	12.63	18.03	1.00	96.25		
81	Ecuador 1	1.00	172.25	30.25	10.78	18.13	1.00	95.00		
19	Davis	1.00	184.75	22.50	9.33	17.65	1.50	88.75		
43	Alamo	1.00	181.50	29.50	15.13	16.18	1.00	90.00		
40	IGH 24	1.00	191.25	36.75	17.13	14.03	1.25	88.25		
9	Jupiter	1.00	191.50	28.00	13.65	15.45	2.00	100.00		
44	Foster	1.00	188.25	30.75	9.05	14.60	2.00	89.75		
64	ICA L-125	1.00	178.25	42.75	13.58	11.85	1.00	91.25		
2	UFV-1	1.00	191.25	27.00	11.25	14.58	2.00	92.00		
39	IGH 23	1.00	186.75	28.50	18.20	15.28	1.00	84.75		
8	ICA Caribe	1.00	188.25	30.25	11.48	10.63	1.00	100.00		
	Grand mean	1.00	188.36	31.70	12.51	15.14	1.25	92.28		
	Standard error of cultivar mean		3.40	3.01	1.28	1.08	.11	5.24		
	Coefficient of variation (%)		3.61	18.98	20.45	14.28	17.38	11.36		
	5% LSD Cultivar means (*****=ns)		9.69	8.57	3.64	3.08	.31	*****		

Table 127. Experiment 782, 1980

Country: PHILIPPINES
Region: ASIA
Latitude: 17° 39′ N
Longitude: 121° 45′ E
Zone: 4
Elevation: 61.6 m

Site: ISABELA STATE UNIVERSITY, CABAGAN
Cooperator(s): FILEMON T. AGBISIT

Date planted: January 26, 1981
Date harvested: May 1981
Soil type: pH 5.75
Fertilizer used (kg/ha): N 30, P 30, K 30
Amount of moisture: 369.2 mm
Number of irrigations: 4 (316 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
41	UFV-1 (BP-2)	807.04	28.00	86.00	4.00	4.00	23.75	28.75	46.63	1.00
16	Cobb	676.39	28.00	80.00	4.25	4.25	1.25	5.00	19.50	1.00
13	Bossier	615.58	28.00	80.00	4.25	4.00	7.50	3.75	16.80	1.00
14	Williams	580.45	28.00	80.00	4.00	4.25	8.75	3.75	24.25	1.00
15	Ransom	562.03	28.00	80.00	4.00	4.00	17.50	16.25	15.38	1.00
44	Foster	561.57	28.00	80.00	4.00	4.00	10.00	7.50	14.45	1.00
3	SJ-2	548.69	28.00	86.00	4.00	4.00	13.75	20.00	44.38	1.00
19	Davis	464.43	28.00	80.00	4.00	4.00	15.00	8.75	19.68	1.00
2	UFV-1	293.31	28.00	98.00	4.25	4.00	6.25	8.75	20.00	1.00
81	Ecuador 1	233.30	36.00	98.00	4.00	4.00	15.00	12.50	34.70	1.00
43	Alamo	125.98	46.00	98.00	4.25	4.00	1.25	8.75	27.10	1.00
	Grand mean	497.16	30.36	86.00	4.09	4.05	10.91	11.25	25.71	1.00
	Standard error of cultivar mean	60.29			.15	.10	6.54	2.68	1.52	
	Coefficient of variation (%)	24.26			7.49	5.00	119.88	47.63	11.83	
	5% LSD Cultivar means (*****=ns)	174.15			*****	*****	*****	7.74	4.39	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
41	UFV-1 (BP-2)	1.00	193.25	21.20	5.20	15.45	3.00		36.2	25.4
16	Cobb	1.00	195.00	17.13	3.08	16.60	2.00		36.6	26.0
13	Bossier	1.00	196.25	12.85	1.95	15.55	3.00		38.2	25.4
14	Williams	1.00	196.25	14.80	3.68	17.60	3.00		37.7	27.3
15	Ransom	1.00	194.25	14.30	1.13	16.20	3.00		38.4	24.0
44	Foster	1.00	195.00	13.30	2.98	16.23	2.00		37.6	25.4
3	SJ-2	2.00	186.75	20.25	7.88	12.35	4.00		37.3	25.2
19	Davis	1.00	193.50	15.35	3.00	16.53	2.00		38.8	24.7
2	UFV-1	1.00	174.75	19.63	.73	15.68	4.00		41.1	23.3
81	Ecuador 1	1.00	170.75	24.60	2.65	16.18	4.00		37.8	25.9
43	Alamo	1.00	138.50	32.13	1.10	13.80	5.00		40.5	23.6
	Grand mean	1.09	184.93	18.68	3.03	15.65	3.18			
	Standard error of cultivar mean		3.84	1.51	.57	.48				
	Coefficient of variation (%)		4.15	16.16	37.80	6.17				
	5% LSD Cultivar means (*****=ns)		11.08	4.36	1.66	1.39				

Table 128. Experiment 114, 1981

Country: PHILIPPINES
Region: ASIA
Latitude: 14° 13′ N
Longitude: 121° 15′ E
Zone: 4
Elevation: 23 m

Site: LOS BANOS, LAGUNA
Cooperator(s): R. E. FUROC, J. W. PENDLETON AND R. A. MORRIS

Date planted: March 25, 1981
Date harvested: July 1981
Soil type: pH 6.4, OM 1.49%, N 0.19%, P 27 kg/ha
Fertilizer used (kg/ha): N 25.0, P 25.0, K 25.0
Amount of moisture: 838 mm
Number of irrigations: 3 (85 mm)
Substitute cultivar: UPL SY-2

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
7	ICA Tunia	3217.00	25.00	98.75	3.75	1.00	46.25	100.00	68.37	1.25
44	Foster	3136.25	22.00	98.25	3.00	1.00	58.75	95.00	27.40	1.00
10	Improved Pelican	3115.50	28.00	105.50	3.00	1.00	56.25	92.50	116.22	2.25
7774	UPL SY-2	3042.50	27.25	98.00	3.25	1.00	58.75	100.00	69.57	3.00
19	Davis	2871.75	25.00	97.50	2.75	1.00	47.50	98.75	26.60	1.00
41	UFV-1 (BP-2)	2758.00	27.75	112.75	3.00	1.00	35.00	96.25	158.15	2.50
43	Alamo	2706.75	38.00	109.75	4.00	1.00	51.25	86.25	43.60	1.75
58	Williams 79	2655.50	22.00	98.00	3.75	1.50	26.25	97.50	48.42	2.00
13	Bossier	2486.00	22.00	98.00	2.75	1.00	26.25	96.25	29.90	1.00
37	G 2120	2404.25	39.75	108.75	3.75	1.00	46.25	83.75	138.07	3.00
2	UFV-1	2362.50	29.50	113.75	3.25	1.00	52.50	77.50	41.45	1.00
46	Ecuador 2	1660.25	31.00	111.50	4.25	1.00	22.50	87.50	62.32	1.25
9	Jupiter	769.00	39.00	117.00	3.50	1.00	57.50	83.75	68.10	1.50
40	IGH 24	641.00	42.25	119.00	3.75	1.00	48.75	88.75	76.70	1.75
39	IGH 23	584.50	39.25	116.75	3.75	1.00	35.00	90.00	75.20	2.25
8	ICA Caribe	68.00	34.50	162.00	4.00	1.00	37.50	87.50	206.45	4.00
	Grand mean	2154.92	30.77	110.33	3.47	1.03	44.14	91.33	78.53	1.91
	Standard error of cultivar mean	227.41	.89	1.28	.35	.07	12.27	3.11	5.26	.19
	Coefficient of variation (%)	21.11	5.81	2.32	20.07	14.00	55.58	6.80	13.39	19.65
	5% LSD Cultivar means (*****=ns)	647.75	2.55	3.64	*****	.21	*****	8.85	14.97	.53

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
7	ICA Tunia	1.00	175.50	43.50	15.45	17.55	2.25	71.25	44.8	20.4
44	Foster	1.00	190.25	38.75	8.57	18.25	3.00	35.00	44.6	21.1
10	Improved Pelican	1.00	186.00	60.50	10.32	11.10	2.00	94.25	44.1	20.8
7774	UPL SY-2	1.00	184.25	29.50	8.65	20.42	2.00	80.50	44.0	20.2
19	Davis	1.00	141.25	36.25	6.12	18.82	2.25	28.75	45.3	21.1
41	UFV-1 (BP-2)	1.00	193.00	74.00	7.72	11.52	2.25	90.00	44.0	20.8
43	Alamo	1.00	194.75	46.50	16.95	11.57	2.00	64.75	45.2	20.0
58	Williams 79	1.00	194.25	20.00	8.10	19.65	3.50	33.75	44.3	22.6
13	Bossier	1.00	188.00	32.25	7.27	16.90	3.00	43.75	46.2	21.5
37	G 2120	1.00	198.50	87.50	14.67	5.95	2.50	95.75	47.2	14.5
2	UFV-1	1.00	195.00	48.00	10.95	10.15	2.00	79.75	45.2	19.6
46	Ecuador 2	1.00	175.00	48.75	12.32	10.67	2.00	74.00	43.8	20.3
9	Jupiter	1.00	188.75	42.25	17.57	10.17	2.00	85.25	45.6	18.1
40	IGH 24	1.00	185.25	52.50	15.20	8.77	2.00	43.75	43.3	18.1
39	IGH 23	1.00	182.25	45.00	19.05	13.02	2.50	70.50	46.7	16.5
8	ICA Caribe	1.00	126.25	102.50	17.15	5.20	5.00	75.00	45.4	16.8
	Grand mean	1.00	181.14	50.48	12.26	13.11	2.52	66.62		
	Standard error of cultivar mean	0.00	6.15	6.85	1.78	.64	.27	4.92		
	Coefficient of variation (%)	0.00	6.79	27.12	28.97	9.77	21.12	14.75		
	5% LSD Cultivar means (*****=ns)	0.00	17.52	19.50	5.06	1.82	.76	14.00		

Table 129. Experiment 123, 1981

Country: PHILIPPINES
Region: ASIA
Latitude: 7° N
Longitude: 125° E
Zone: 1
Elevation: 18 m

Site: BOTANIQUE PHILIPPINES INC., LAGOA, GEN. SANTOS CITY
Cooperator(s): FREDERICO D. BALLON

Date planted: August 22, 1981
Date harvested: December 2, 1981
Soil type: sand 30%, silt 45%, clay 25%, pH 6.8
Fertilizer used (kg/ha): N 75.7, P 35.0, K 30.0
Number of irrigations: 2 (150 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
212	BPI (12A) SY2	2853.02	35.00	90.00	1.50	1.00	88.75	93.75	97.55	1.75
213	BPI L114	2811.37	45.00	101.00	2.75	2.50	81.25	87.50	79.40	1.50
40	IGH 24	2040.85	48.00	105.00	3.75	2.50	71.25	95.00	75.85	1.50
46	Ecuador 2	1978.37	33.00	95.00	3.75	3.25	83.75	90.00	63.87	1.25
39	IGH 23	1915.90	38.00	101.00	3.75	3.50	68.75	75.00	82.77	1.75
41	UFV-1 (BP-2)	1790.95	31.00	101.00	3.50	2.50	81.25	88.75	109.07	2.50
8	ICA Caribe	1728.47	36.00	105.00	4.00	2.75	86.25	86.25	115.50	3.75
9	Jupiter	1707.65	46.00	105.00	2.75	1.75	68.75	75.00	74.55	1.75
37	G 2120	1645.17	52.00	89.00	3.25	2.25	77.50	87.50	127.42	5.00
58	Williams 79	1624.35	26.00	88.00	4.25	3.75	67.50	70.00	72.75	1.00
43	Alamo	1541.05	48.00	94.00	1.50	1.25	77.50	88.75	69.15	2.50
7	ICA Tunia	1541.05	32.00	89.00	4.00	4.00	86.25	95.00	79.52	1.25
19	Davis	1520.22	31.00	96.00	4.00	2.00	57.50	75.00	33.25	1.00
2	UFV-1	1353.62	34.00	95.00	3.75	2.50	80.00	93.75	43.10	1.00
44	Foster	1270.32	26.00	95.75	2.75	2.00	73.75	73.75	30.17	1.00
13	Bossier	708.05	26.00	99.00	1.50	1.00	86.25	93.75	25.45	1.00
	Grand mean	1751.90	36.69	96.80	3.17	2.41	77.27	85.55	73.71	1.84
	Standard error of cultivar mean	114.73	0.00	.34	.24	.29	4.32	2.68	3.07	.22
	Coefficient of variation (%)	13.10	0.00	.70	15.01	23.84	11.19	6.27	8.32	23.49
	5% LSD Cultivar means (*****=ns)	326.79	0.00	.96	.68	.82	12.31	7.64	8.73	.62

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
212	BPI (12A) SY2	1.00	173.50	58.75	10.30	15.90	1.25	99.00	42.9	20.7
213	BPI L114	1.25	176.00	61.50	8.10	17.17	1.50	100.00	44.3	18.6
40	IGH 24	1.00	196.00	63.25	7.87	13.00	1.75	97.00	36.9	22.0
46	Ecuador 2	1.25	196.00	74.00	5.82	15.95	1.75	95.00	42.0	21.8
39	IGH 23	1.25	196.00	71.50	9.10	14.87	2.75	90.00	44.0	20.5
41	UFV-1 (BP-2)	1.50	196.00	55.50	12.45	15.07	1.25	100.00	38.9	21.5
8	ICA Caribe	1.50	196.00	95.75	6.65	10.22	1.75	57.00	44.3	18.9
9	Jupiter	1.00	196.00	64.50	8.45	15.85	1.75	96.00	40.4	21.8
37	G 2120	1.75	196.00	102.75	9.30	7.22	2.50	100.00	43.1	18.4
58	Williams 79	1.00	196.00	43.00	5.57	21.05	3.75	96.00	42.4	22.1
43	Alamo	1.25	196.00	75.00	12.87	14.27	1.25	97.00	38.9	22.4
7	ICA Tunia	1.00	196.00	45.75	9.65	15.50	2.50	99.00	41.1	21.6
19	Davis	1.00	196.00	51.25	3.65	19.35	3.75	67.00	41.6	21.6
2	UFV-1	1.00	196.00	52.50	6.55	15.82	2.25	97.00	43.2	21.1
44	Foster	1.00	196.00	40.00	4.12	19.87	5.00	74.00	42.9	21.3
13	Bossier	1.00	196.00	29.75	3.07	20.50	5.00	71.00 (1)	44.7	20.9
	Grand mean	1.17	193.34	61.55	7.72	15.73	2.48	89.69		
	Standard error of cultivar mean	.18	6.39	5.65	1.15	.30	.24	14.00		
	Coefficient of variation (%)	30.04	6.61	18.35	29.74	3.80	19.40	15.61		
	5% LSD Cultivar means (*****=ns)	*****	*****	16.08	3.27	.85	.69	*****		

Table 130. Experiment 902, 1980

Country: PORTUGAL
Region: EUROPE
Latitude: 38° 45′ N
Longitude: 9° W
Zone: 10
Elevation: 10 m

Site: QUINTA DO MARQUES-OEIRAS
Cooperator(s): ABILIO MENDES GASPAR

Date planted: May 7, 1980
Date harvested: September 1980
Soil type: alluvial, sand 57.1%, silt 18.4%, clay 24.5%, pH 8.0
Fertilizer used (kg/ha): N 25, P 26.5, K 24.9
Amount of moisture: 550 mm
Number of irrigations: 10 (375 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
21	Calland	3491.25	62.00	147.00	3.50	2.50	88.75	96.25	74.75	1.00
50	DeSoto	2958.75	68.00	148.25	3.00	1.50	83.75	95.00	82.50	1.00
61	Cumberland	2741.25	63.25	145.00	3.75	2.00	83.75	85.00	66.75	1.00
62	York	2520.00	104.50	173.00	3.50	1.75	92.50	87.50	117.50	2.00
32	Columbus	2506.25	75.25	163.75	3.75	2.25	85.00	77.50	86.00	1.00
60	Kent	2360.00	68.50	161.00	3.50	2.25	90.00	88.75	74.50	1.00
14	Williams	2130.00	66.75	138.50	2.50	2.25	81.25	76.25	77.25	1.00
56	Coles	1891.25	46.50	138.00	4.00	2.50	97.50	80.00	66.00	1.00
55	Harlon	1837.50	47.50	114.00	3.00	2.50	93.75	53.75	50.25	1.00
54	Chippewa 64	1832.50	48.50	127.50	3.00	1.75	92.50	63.75	70.00	1.00
59	Will	1811.25	59.25	138.00	3.50	2.75	86.25	63.75	65.25	1.00
52	Bay	1811.25	105.00	171.00	4.00	1.25	95.00	81.25	107.00	2.00
57	Corsoy 79	1528.75	56.50	127.50	4.00	2.50	85.00	66.25	65.75	1.00
58	Williams 79	1507.50	61.75	138.75	3.75	2.00	87.50	86.25	65.75	1.00
38	McCall	1480.00	47.50	113.00	3.00	3.25	88.75	27.50	55.75	1.75
36	Evans	1335.00	46.50	112.50	3.00	2.00	100.00	42.50	48.75	1.00
	Grand mean	2108.91	64.20	141.05	3.42	2.19	89.45	73.20	73.36	1.17
	Standard error of cultivar mean	172.34	1.44	1.04	.45	.50	4.24	11.92	3.64	.06
	Coefficient of variation (%)	16.34	4.48	1.48	26.39	45.71	9.47	32.57	9.91	10.67
	5% LSD Cultivar means (*****=ns)	490.90	4.09	2.97	*****	*****	*****	33.96	10.36	.18

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
21	Calland	1.00	187.75	33.75	8.50	19.83	2.00	72.00	41.0	18.4
50	DeSoto	1.00	195.75	42.75	9.50	20.23	2.00	77.75	41.4	20.1
61	Cumberland	1.00	179.50	49.00	6.75	22.28	2.00	96.25		
62	York	1.00	191.00	73.00	12.00	19.10	3.00	76.00		
32	Columbus	1.00	191.00	41.75	9.00	17.10	2.00	96.75	41.7	20.3
60	Kent	1.00	195.25	40.50	8.25	19.35	2.00	74.00		
14	Williams	1.00	194.00	47.50	9.00	20.95	1.75	77.25	42.3	20.8
56	Coles	1.00	193.00	35.75	6.25	20.10	2.00	84.25		
55	Harlon	1.00	193.50	43.00	7.25	17.70	1.00	98.50		
54	Chippewa 64	1.00	196.50	40.75	9.00	16.73	2.00	97.50	41.4	19.9
59	Will	1.00	193.00	50.50	8.25	20.68	2.00	95.25		
52	Bay	1.00	196.25	69.25	10.50	18.00	2.00	95.75	40.4	21.0
57	Corsoy 79	1.00	195.25	51.25	6.50	16.13	2.00	97.00		
58	Williams 79	1.00	193.25	33.00	7.00	20.20	2.00	86.25		
38	McCall	1.00	193.50	44.25	7.50	19.08	2.00	98.50	40.7	19.1
36	Evans	1.00	192.00	38.25	8.00	16.90	2.00	95.75	41.8	21.1
	Grand mean	1.00	192.53	45.89	8.33	19.02	1.98	88.67		
	Standard error of cultivar mean		2.58	4.49	.38	.46	.06	.72		
	Coefficient of variation (%)		2.68	19.56	9.03	4.88	6.30	1.62		
	5% LSD Cultivar means (*****=ns)		7.36	12.79	1.07	1.32	.18	2.05		

Table 131. Experiment 317, 1981

Country: PORTUGAL
Region: EUROPE
Latitude: 38° 45′ N
Longitude: 9° W
Zone: 10
Elevation: 10 m

Site: QUINTA DO MARQUES: OEIRAS
Cooperator(s): ABILIO MENDES GASPER

Date planted: May 12, 1981
Date harvested: September 1981
Soil type: sand 57.1%, silt 18.4%, clay 24.5%, pH 8.0, OM 1.7%, alluvial soil
Fertilizer used (kg/ha): N 25.0, P 25.0, K 25.0
Amount of moisture: 560 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
57	Corsoy 79	4706.36	55.50	127.00	3.25	2.50	100.00	100.00	86.25	1.50
50	DeSoto	4624.67	64.00	127.00	3.75	3.25	100.00	97.50	101.75	2.25
61	Cumberland	4442.55	98.00	128.50	3.25	2.25	100.00	97.50	92.00	2.25
35	Crawford	4286.27	71.75	153.00	3.25	2.25	98.75	95.00	112.75	2.00
73	Century	3837.43	55.00	140.00	4.00	3.75	100.00 (3)	95.00 (3)	93.50	2.00
58	Williams 79	3773.25	60.00	137.75	3.75	3.00	100.00	93.75	95.25	2.25
71	Hodgson 78	3739.08	52.25	120.00	4.75	2.50	100.00 (1)	96.25	70.50	1.25
72	Amcor	3664.48	54.00	133.00	3.50	3.50	100.00	97.50	111.00	3.00
36	Evans	3658.65	51.25	119.00	3.50	2.25	100.00 (3)	98.75	64.00	1.00
69	Essex	3518.20	92.00	163.00	4.25	3.25	100.00 (2)	98.33 (3)	117.75	2.75
51	Celest	3475.28	98.00	155.00	3.00	2.75	100.00	93.75	131.50	3.00
70	Hardin	3374.84	54.00	127.00	4.25	2.50	100.00 (3)	91.25	80.75	2.50
74	Pella	3218.14	56.50	133.00	3.25	2.75	100.00	97.50	97.75	2.00
38	McCall	2906.00	55.00	119.00	2.75	2.75	100.00	100.00	67.50	1.75
59	Will	2685.54	60.00	133.00	4.25	2.75	100.00 (3)	100.00 (3)	88.50	2.00
60	Kent	2609.69	69.25	145.00	3.75	3.25	100.00 (3)	96.25	107.50	2.00
	Grand mean	3657.53	65.41	135.02	3.66	2.83	99.91	96.72	94.89	2.09
	Standard error of cultivar mean	465.11	.64	3.88	.44	.59	.68	5.39	2.28	.25
	Coefficient of variation (%)	25.43	1.96	5.74	24.01	41.70	.68	5.57	4.80	24.34
	5% LSD Cultivar means (*****=ns)	*****	1.82	11.04	*****	*****	*****	*****	6.49	.73

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
57	Corsoy 79	1.00	200.00	40.25	9.75	16.80	1.00	99.00	43.4	17.0
50	DeSoto	1.00	199.00	47.25	11.75	15.70	1.00	99.00	43.7	16.6
61	Cumberland	1.00	172.50	47.50	8.00	18.77	1.00	99.50	43.0	17.5
35	Crawford	1.00	200.00	37.50	11.50	16.07	1.00	100.00	42.8	18.3
73	Century	1.00	200.00	33.25	11.75	16.42	1.00	99.50	44.4	16.7
58	Williams 79	1.00	173.50	32.50	12.75	18.75	1.00	99.75	43.3	18.2
71	Hodgson 78	1.00	197.50	35.75	8.50	18.40	1.00	97.75	42.1	18.3
72	Amcor	1.00	200.00	35.50	12.00	18.40	1.00	99.50	42.1	19.1
36	Evans	1.00	200.00	36.75	8.25	17.32	1.00	99.50	41.7	17.4
69	Essex	1.00	200.00	46.75	14.00	13.75	1.00	99.50	43.5	17.1
51	Celest	1.00	200.00	54.75	17.25	22.22	1.00	100.00	42.6	17.8
70	Hardin	1.00	200.00	36.50	8.25	17.37	1.00	99.75	43.2	17.3
74	Pella	1.00	199.25	32.00	11.00	17.62	1.00	99.25	43.0	18.3
38	McCall	1.00	199.75	28.75	11.50	18.90	1.00	99.50	42.8	17.8
59	Will	1.00	200.00	27.75	11.75	17.02	1.00	100.00	44.9	16.9
60	Kent	1.00	200.00	33.75	11.50	16.02	1.00	100.00	43.2	18.3
	Grand mean	1.00	196.34	37.91	11.22	17.47	1.00	99.47		
	Standard error of cultivar mean	0.00	8.27	3.79	.39	.50	0.00	.46		
	Coefficient of variation (%)	0.00	8.43	19.99	6.93	5.70	0.00	.92		
	5% LSD Cultivar means (*****=ns)	0.00	*****	10.79	1.11	1.42	0.00	*****		

Table 132. Experiment 743, 1980

Country: PUERTO RICO
Region: MESO-AMERICA
Latitude: 18° N
Longitude: 40° W
Zone: 4
Elevation: 128 m

Site: ISABELA
Cooperator(s): JOSE BRAVO, LUIS CAMACHO

Date planted: June 19, 1980
Date harvested: September 1980
Soil type: cotto clay
Amount of moisture: 359 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
44	Foster	2961.12	29.75	103.75	2.00	1.50	100.00	93.75	39.25	1.00
40	IGH 24	2751.51	53.75	126.00	1.75	1.75	100.00	68.75	94.00	1.50
2	UFV-1	2690.09	40.50	122.25	2.00	1.25	98.75	61.25	60.50	1.00
43	Alamo	2625.73	46.50	112.25	2.00	1.50	98.75	71.25	54.50	1.25
3	SJ-2	2606.61	38.25	110.25	1.75	1.50	100.00	61.25	91.50	2.75
7	ICA Tunia	2528.65	35.25	113.50	1.50	1.75	100.00	82.50	61.00	1.50
41	UFV-1 (BP-2)	2497.02	36.75	121.00	1.50	1.25	100.00	72.50	106.50	2.00
10	Improved Pelican	2480.47	40.00	112.25	2.25	1.50	100.00	35.00	82.25	1.50
39	IGH 23	2479.37	50.25	120.50	1.50	1.50	87.50	58.75	89.50	1.50
64	ICA L-125	2477.90	46.25	142.25	1.50	1.75	100.00	60.00	111.50	1.75
9	Jupiter	2420.16	42.50	122.00	1.50	1.75	98.75	63.75	76.25	1.00
37	G 2120	2299.91	51.75	102.50	1.75	1.75	100.00	78.75	101.25	2.00
19	Davis	2253.57	32.75	101.50	1.75	1.00	100.00	92.50	49.75	1.25
63	Hutton	2120.81	29.00	100.00	2.25	1.00	98.75	88.75	37.75	1.00
8	ICA Caribe	2068.59	57.00	139.25	1.75	1.75	100.00	65.00	103.00	2.00
14	Williams	1378.69	22.00	81.50	1.75	1.75	100.00	86.25	48.75	1.00
	Grand mean	2415.01	40.77	114.42	1.78	1.52	98.91	71.25	75.45	1.50
	Standard error of cultivar mean	123.27			.27	.27		7.22	2.74	.18
	Coefficient of variation (%)	10.21			29.96	35.06		20.27	7.27	24.09
	5% LSD Cultivar means (*****=ns)	351.12			*****	*****		20.57	7.81	.51

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
44	Foster	1.00	181.25	30.00	7.75	16.25	4.50	54.50		
40	IGH 24	1.00	130.50	55.75	11.50	13.88	2.25	89.50		
2	UFV-1	1.00	154.75	34.75	12.50	14.00	2.00	58.25		
43	Alamo	1.00	180.25	33.00	18.25	14.33	2.25	80.75		
3	SJ-2	1.00	146.75	47.25	13.75	12.88	2.75	83.25		
7	ICA Tunia	1.00	112.75	53.25	13.00	21.23	3.75	82.50		
41	UFV-1 (BP-2)	1.00	182.75	42.50	14.25	14.88	3.00	77.75		
10	Improved Pelican	1.00	156.50	48.75	17.00	13.35	2.25	78.75		
39	IGH 23	1.00	171.25	36.50	15.00	15.48	3.00	58.25		
64	ICA L-125	1.00	76.25	89.50	14.00	14.93	3.75	75.75		
9	Jupiter	1.00	160.75	41.75	12.50	16.00	2.75	88.75		
37	G 2120	1.00	183.00	58.50	10.25	7.35	2.00	93.50		
19	Davis	1.00	162.25	19.00	8.00	18.33	4.25	62.75		
63	Hutton	1.00	149.25	25.75	7.75	20.95	4.75	32.75		
8	ICA Caribe	1.00	147.75	52.75	17.00	9.68	2.00	31.50		
14	Williams	1.00	164.00	29.75	7.00	15.70	4.50	69.50		
	Grand mean	1.00	153.75	43.67	12.47	14.95	3.11	69.88		
	Standard error of cultivar mean		12.48	7.40	.65	.35	.24	4.20		
	Coefficient of variation (%)		16.23	33.87	10.45	4.65	15.31	12.02		
	5% LSD Cultivar means (*****=ns)		35.55	21.07	1.86	.99	.68	11.96		

Table 133. Experiment 819, 1980

Country: PUERTO RICO
Region: MESO-AMERICA
Latitude: 18° N
Longitude: 40° W
Zone: 4
Elevation: 128 m
Site: ISABELA
Cooperator(s): JOSE BRAVO
Date planted: May 22, 1980
Date harvested: August 1980
Soil type: cotto clay
Fertilizer used (kg/ha): P 26.2, K 25
Amount of moisture: 674 mm
Number of irrigations: 2 (50 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
18	Forrest	3147.94	27.25	93.25	2.00	1.50	97.50	76.25	44.50	1.00
47	PK-73-94	2849.33	36.50	129.50	2.00	1.00	100.00	60.00	54.50	1.00
2	UFV-1	2829.47	43.25	142.00	2.00	1.00	98.75	48.75	63.75	1.00
19	Davis	2783.50	33.00	102.50	2.00	1.50	95.00	63.75	48.25	1.00
49	Centennial	2576.09	27.75	103.00	2.00	1.25	97.50	75.00	45.00	1.00
44	Foster	2377.50	29.00	112.75	2.00	1.50	98.75	58.75	39.25	1.00
43	Alamo	2372.72	52.25	130.25	2.50	1.50	100.00	43.75	58.00	1.00
51	Celest	2245.11	30.00	99.50	2.00	2.00	93.75	80.00	48.50	1.00
48	Gail	2086.61	27.75	89.75	2.00	2.00	100.00	88.75	31.50	1.00
10	Improved Pelican	1980.41	41.50	133.75	2.50	1.25	100.00	42.50	104.00	2.00
14	Williams	1959.37	22.25	85.00	2.00	2.00	100.00	80.00	45.75	1.00
50	DeSoto	1957.90	21.75	86.00	2.00	1.75	93.75	81.25	45.50	1.00
52	Bay	1945.77	25.75	103.00	2.50	2.00	93.75	63.75	43.25	1.00
37	G 2120	1924.80	56.00	112.75	2.00	1.00	100.00	45.00	105.50	2.00
13	Bossier	1879.57	27.50	116.00	2.00	1.00	98.75	52.50	31.25	1.00
53	Ware	1320.96	21.25	84.25	2.50	3.00	95.00	91.25	23.00	1.00
	Grand mean	2264.82	32.67	107.70	2.13	1.58	97.66	65.70	51.97	1.13
	Standard error of cultivar mean	151.98	.80	1.06	.25	.25	2.17	6.73	2.72	
	Coefficient of variation (%)	13.42	4.89	1.97	23.79	31.26	4.44	20.47	10.45	
	5% LSD Cultivar means (*****=ns)	432.90	2.28	3.02	*****	.70	*****	19.16	7.74	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
18	Forrest	1.00	227.25	34.75	9.00	13.80	2.75	59.75		
47	PK-73-94	1.00	216.50	29.75	10.25	14.40	2.75	70.50		
2	UFV-1	1.00	196.00	41.00	12.50	13.13	4.00	35.25		
19	Davis	1.00	204.00	24.50	9.00	13.90	2.50	31.25		
49	Centennial	1.00	216.00	24.00	8.00	14.60	2.75	54.75		
44	Foster	1.00	207.75	38.25	7.50	11.58	3.75	33.50		
43	Alamo	1.00	208.75	24.00	13.50	15.50	2.50	69.75		
51	Celest	1.00	191.50	27.25	12.00	17.88	3.75	43.50		
48	Gail	1.00	185.00	24.50	6.25	18.88	3.25	74.00		
10	Improved Pelican	1.00	200.25	32.00	13.50	13.23	2.25	57.68		
14	Williams	1.00	217.00	19.25	8.00	18.83	3.75	73.25		
50	DeSoto	1.00	216.75	19.25	7.00	20.10	4.00	68.75		
52	Bay	1.25	220.75	18.00	9.25	20.58	5.00	18.00		
37	G 2120	1.00	181.75	37.75	12.75	6.60	2.25	78.50		
13	Bossier	1.00	205.50	28.00	7.25	13.73	4.75	31.00		
53	Ware	1.00	195.50	17.25	7.25	19.78	4.00	69.25		
	Grand mean	1.02	205.64	27.47	9.56	15.40	3.38	54.29		
	Standard error of cultivar mean	.06	8.47	3.28	.70	.38	.32	5.75		
	Coefficient of variation (%)	12.31	8.24	23.86	14.64	4.91	18.93	21.20		
	5% LSD Cultivar means (*****=ns)	*****	24.12	9.33	1.99	1.08	.91	16.39		

Table 134. Experiment 158, 1981

Country: PUERTO RICO
Region: MESO-AMERICA
Latitude: 18° N
Longitude: 40° W
Zone: 4
Elevation: 28 m

Site: ISABELA
Cooperator(s): LUIS H. CAMACHO AND JOSE BRAVO

Date planted: June 18, 1981
Date harvested: October 1981
Soil type: cotto clay

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
19	Davis	2922.00	35.00	96.50	3.75	2.00	95.00	90.00	40.75	1.00
44	Foster	2710.00	29.00	99.00	3.75	2.00	92.50	80.00	37.75	1.00
13	Bossier	2351.25	29.00	102.00	3.25	2.25	93.75	88.75	35.00	1.00
43	Alamo	2344.00	47.75	111.25	3.75	2.75	98.75	77.50	64.50	1.00
2	UFV-1	2324.50	40.25	110.75	3.25	1.50	96.25	63.75	57.00	1.00
41	UFV-1 (BP-2)	2275.50	37.75	111.75	3.75	2.00	91.25	50.00	130.00	2.00
40	IGH 24	2271.25	55.00	122.75	4.00	2.75	85.00	80.00	107.00	2.00
9	Jupiter	2258.25	48.50	115.75	4.00	2.75	88.75	57.50	95.50	1.50
7	ICA Tunia	2088.00	35.50	105.50	3.75	1.75	93.75	92.50	80.75	1.00
58	Williams 79	2074.75	23.00	84.25	3.00	1.75	82.50	95.00	51.00	1.00
46	Ecuador 2	1996.75	42.50	113.00	3.75	2.50	92.50	66.25	71.75	1.00
3	SJ-2	1924.50	39.00	104.75	3.75	2.00	97.50	60.00	109.50	1.50
39	IGH 23	1886.50	51.50	112.25	3.25	2.25	86.25	65.00	106.00	1.25
37	G 2120	1878.75	50.75	98.50	3.75	2.50	98.75	61.25	104.75	1.50
10	Improved Pelican	1867.50	40.50	108.75	4.00	2.00	96.25	51.25	119.25	1.75
8	ICA Caribe	1633.25	59.50	137.50	4.00	3.25	91.25	48.75	134.00	3.00
	Grand mean	2175.42	41.53	108.39	3.67	2.25	92.50	70.47	84.03	1.41
	Standard error of cultivar mean	126.08	.43	1.09	.21	.30	4.15	5.84	4.06	.15
	Coefficient of variation (%)	11.59	2.09	2.00	11.27	26.40	8.97	16.57	9.66	22.01
	5% LSD Cultivar means (*****=ns)	359.13	1.23	3.09	.59	.85	*****	16.63	11.56	.44

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
19	Davis	1.00	146.25	35.40	7.75	18.00	2.25	77.75		
44	Foster	1.00	161.50	41.90	7.00	15.57	3.25	79.00		
13	Bossier	1.00	138.25	39.90	7.50	18.00	3.25	76.75		
43	Alamo	1.00	150.00	51.65	14.25	13.22	2.75	89.25		
2	UFV-1	1.00	154.00	49.45	16.00	10.00	2.50	87.25		
41	UFV-1 (BP-2)	1.00	158.25	64.00	18.00	12.75	3.00	91.50		
40	IGH 24	1.00	146.50	49.40	14.00	13.45	2.00	88.50		
9	Jupiter	1.00	132.00	48.85	14.50	14.67	2.75	94.00		
7	ICA Tunia	1.00	141.00	49.75	14.25	17.97	3.75	88.75		
58	Williams 79	1.00	148.25	23.00	9.25	21.72	5.00	83.50		
46	Ecuador 2	1.00	132.50	52.00	9.50	13.85	2.50	90.00		
3	SJ-2	1.00	158.00	47.50	12.50	13.52	3.00	82.75		
39	IGH 23	1.00	150.00	61.65	19.00	12.52	3.00	73.50		
37	G 2120	1.00	161.00	85.40	15.25	6.12	2.00	93.00		
10	Improved Pelican	1.00	135.50	70.05	15.00	13.70	3.25	80.25		
8	ICA Caribe	1.00	150.50	53.60	22.00	12.42	3.50	57.50		
	Grand mean	1.00	147.72	51.47	13.48	14.22	2.98	83.33		
	Standard error of cultivar mean	0.00	8.61	5.47	1.71	.78	.24	3.48		
	Coefficient of variation (%)	0.00	11.66	21.25	25.39	10.91	16.25	8.34		
	5% LSD Cultivar means (*****=ns)	0.00	*****	15.57	4.88	2.21	.69	9.90		

Table 135. Experiment 703, 1980

Country: RWANDA
Region: AFRICA
Site: RUBONA
Cooperator(s): P. NYABYENDA
Latitude: 2° 29′ S
Longitude: 29° 46′ E
Zone: 3
Elevation: 1650 m
Date planted: September 26, 1980
Date harvested: January 1981
Amount of moisture: 691.8 mm
Substitute cultivar: Palmetto

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
63	Hutton	2492.50	36.00	114.75	4.25	2.00	92.50	52.50	41.03	1.25
13	Bossier	2462.50	32.75	104.00	4.00	2.50	81.25	21.25	49.40	1.00
15	Ransom	2250.00	45.75	131.75	5.25	2.50	65.00	22.50	40.65	1.25
19	Davis	2152.50	41.75	122.25	4.50	3.50	81.25	60.00	46.40	1.00
7	ICA Tunia	1945.00	52.25	145.50	5.00	3.25	100.00	25.00	73.15	2.25
44	Foster	1840.00	35.25	104.00	4.00	2.00	53.75	37.50	30.05	1.00
14	Williams	1837.50	33.00	114.25	4.50	2.00	41.25	22.50	43.43	1.75
2	UFV-1	1795.00	47.00	145.00	4.75	3.00	85.00	32.50	47.60	1.00
4870	Palmetto	1772.50	42.00	128.00	5.00	3.00	56.25	31.25	69.32	2.00
8	ICA Caribe	1697.50	52.75	135.75	5.00	4.25	92.50	43.75	69.35	3.00
16	Cobb	1630.00	36.75	97.25	3.50	1.50	52.50	30.00	36.23	.75
9	Jupiter	1517.50	84.25	160.75	4.75	3.00	56.25	36.25	77.55	2.00
3	SJ-2	1487.50	76.50	145.00	4.75	3.25	41.25	23.75	74.80	3.00
43	Alamo	1372.50	84.50	155.75	5.00	3.25	95.00	37.50	65.83	2.25
37	G 2120	875.00	50.75	164.50	4.75	3.50	91.25	56.25	92.25	2.25
45	ICA L-109	690.00	127.00	170.25	4.50	3.50	58.75	33.75	68.10	2.50
	Grand mean	1738.59	54.89	133.67	4.59	2.88	71.48	35.39	57.82	1.77
	Standard error of cultivar mean	181.11	2.03	4.27	.09	.40	13.17	9.79	8.64	.45
	Coefficient of variation (%)	20.83	7.40	6.38	3.89	27.74	36.85	55.32	29.89	51.15
	5% LSD Cultivar means (*****=ns)	515.87	5.78	12.15	.25	1.14	37.52	*****	24.61	1.29

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
63	Hutton	1.50	193.50	16.53		16.13	1.50	96.00	46.6	18.9
13	Bossier	2.00	194.50	19.73		15.63	1.75	98.00	46.0	17.5
15	Ransom	2.25	235.00	23.35		21.00	2.00	118.25	45.2	19.1
19	Davis	1.00	200.00	21.78		16.38	1.50	97.25	46.3	17.0
7	ICA Tunia	1.00	175.00	43.18		16.63	1.50	96.50	45.6	18.4
44	Foster	1.50	193.25	18.68		14.25	1.25	97.75	45.0	18.7
14	Williams	2.25	189.75	29.55		17.00	1.25	93.50	44.6	19.1
2	UFV-1	1.00	198.25	34.48		16.50	2.00	94.00	47.1	16.1
4870	Palmetto	1.00	200.00	40.90		15.38	2.75	96.00	47.2	15.5
8	ICA Caribe	1.75	200.00	52.58		14.75	2.50	72.75	48.3	14.9
16	Cobb	.75	144.50	23.35		11.13	.75	73.25	42.0	18.9
9	Jupiter	1.00	179.75	20.68		16.13	2.00	97.50	44.9	17.5
3	SJ-2	1.00	200.00	41.88		14.38	1.50	94.00	43.4	17.6
43	Alamo	1.00	189.75	30.70		16.75	1.75	95.25	46.8	15.5
37	G 2120	1.00	190.25	21.75		15.00	4.00	98.50	46.7	14.9
45	ICA L-109	1.25	187.25	23.63		11.00	2.25	96.50	45.0	16.6
	Grand mean	1.33	191.92	28.92		15.50	1.89	94.69		
	Standard error of cultivar mean	.13		5.62			.20			
	Coefficient of variation (%)	19.29		38.86			21.16			
	5% LSD Cultivar means (*****=ns)	.36		16.00			.57			

Table 136. Experiment 224, 1981

Country: SAUDI ARABIA
Region: MIDDLE EAST
Latitude: 26° 4′ N
Longitude: 43° 59′ E
Zone: 8
Elevation: 724 m

Site: UNAYZAH, GASSIM
Cooperator(s): EDDIE HUANG, MOHAMED ZEINI JOWANA

Date planted: August 15, 1981
Date harvested: November 1981
Soil type: sand 87.1%, silt 9.5%, clay 3.4%, pH 7.8, OM 0.69, sandy soil
Fertilizer used (kg/ha): N 36.0, P 16.0, K 3.0
Amount of moisture: 450 M
Number of irrigations: 15 (450 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
19	Davis	3122.85 (3)	36.33 (3)	89.33 (3)	4.67 (3)	3.67 (3)	100.00 (3)	100.00 (3)	18.73 (3)	1.00 (3)
10	Improved Pelican	2967.26 (3)	41.33 (3)	87.00 (3)	4.67 (3)	4.33 (3)	100.00 (3)	100.00 (3)	53.13 (3)	1.00
2	UFV-1	2633.86 (3)	48.00 (3)	101.33 (3)	4.33 (3)	4.00 (3)	100.00 (3)	100.00 (3)	32.73 (3)	1.00 (3)
75	Braxton	2633.86 (3)	35.00 (3)	86.00 (3)	4.67 (3)	5.00 (3)	100.00 (3)	100.00 (3)	27.73 (3)	1.00 (3)
43	Alamo	2567.18 (3)	55.33 (3)	105.00 (3)	4.67 (3)	4.33 (3)	100.00 (3)	100.00 (3)	37.07 (3)	1.00 (3)
50	DeSoto	2533.84 (3)	28.67 (3)	87.00 (3)	4.33 (3)	4.33 (3)	100.00 (3)	100.00 (3)	27.00 (3)	1.00 (3)
44	Foster	2433.82 (3)	31.00 (3)	83.33 (3)	5.00 (3)	4.67 (3)	100.00 (3)	100.00 (3)	17.80 (3)	1.00 (3)
58	Williams 79	2422.71 (3)	28.00 (3)	84.00 (3)	4.00 (3)	4.67 (3)	100.00 (3)	100.00 (3)	30.07 (3)	1.00 (3)
69	Essex	2417.15 (3)	32.00 (3)	88.67 (3)	4.00 (3)	4.33 (3)	100.00 (3)	100.00 (3)	17.27 (3)	1.00 (3)
47	PK-73-94	2300.46 (3)	37.33 (3)	88.00 (3)	5.00 (3)	4.67 (3)	100.00 (3)	100.00 (3)	22.27 (3)	1.00 (3)
51	Celest	2133.76 (3)	33.00 (3)	85.33 (3)	4.67 (3)	5.00 (3)	100.00 (3)	100.00 (3)	22.73 (3)	1.00 (3)
35	Crawford	2083.75 (3)	29.33 (3)	85.67 (3)	4.33 (3)	4.00 (3)	100.00 (3)	100.00 (3)	29.27 (3)	1.00 (3)
52	Bay	2078.19 (3)	31.33 (3)	84.00 (3)	4.67 (3)	4.00 (3)	100.00 (3)	100.00 (3)	15.37 (3)	1.00 (3)
49	Centennial	2025.40 (2)	31.00 (2)	81.00 (2)	4.50 (2)	4.50 (2)	100.00 (2)	100.00 (2)	17.30 (2)	1.00 (2)
48	Gail	1883.71 (3)	33.00 (3)	84.33 (3)	4.33 (3)	4.67 (3)	100.00 (3)	100.00 (3)	17.53 (3)	1.00 (3)
53	Ware	1439.18 (3)	31.67 (3)	82.33 (3)	4.67 (3)	5.00 (3)	100.00 (3)	100.00 (3)	14.27 (3)	1.00 (3)
	Grand mean	2361.82	35.23	87.79	4.53	4.45	100.00	100.00	25.18	1.00
	Standard error of cultivar mean	569.38	7.48	6.55	.58	.72	0.00	0.00	10.20	0.00
	Coefficient of variation (%)	24.11	21.22	7.46	12.89	16.11	0.00	0.00	40.50	0.00
	5% LSD Cultivar means (*****=ns)	*****	*****	*****	*****	*****	0.00	0.00	*****	0.00

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
19	Davis	1.00 (3)	172.67 (3)	49.07 (3)	2.60 (3)	15.63 (3)	2.33 (3)	80.00	42.0	18.9
10	Improved Pelican	1.00 (3)	156.67 (3)	61.60 (3)	8.40 (3)	11.13 (3)	2.00 (3)	93.00	41.5	21.1
2	UFV-1	1.00 (3)	158.00 (3)	51.67 (3)	6.27 (3)	13.17 (3)	3.67 (3)	84.00	42.0	19.3
75	Braxton	1.00 (3)	191.00 (3)	42.73 (3)	4.93 (3)	14.30 (3)	1.00 (3)	86.67	41.6	18.7
43	Alamo	1.00 (3)	175.33 (3)	50.13 (3)	6.40 (3)	7.87 (3)	4.00 (3)	93.00	41.7	17.4
50	DeSoto	1.00 (3)	156.00 (3)	27.93 (3)	3.73 (3)	19.40 (3)	3.33 (3)	65.00	44.5	18.2
44	Foster	1.00 (3)	168.00 (3)	40.20 (3)	3.20 (3)	17.33 (3)	2.00 (3)	78.00	41.6	19.4
58	Williams 79	3.00 (3)	160.00 (3)	34.33 (3)	3.47 (3)	16.57 (3)	2.67 (3)	91.00	42.7	19.9
69	Essex	1.00 (3)	189.00 (3)	35.40 (3)	2.27 (3)	16.67 (3)	2.00 (3)	85.67	43.7	19.0
47	PK-73-94	1.00 (3)	164.00 (3)	65.53 (3)	4.33 (3)	13.40 (3)	2.33 (3)	81.00	42.7	18.1
51	Celest	1.00 (3)	158.00 (3)	28.73 (3)	5.13 (3)	16.20 (3)	1.67 (3)	84.33	40.1	20.2
35	Crawford	1.00 (3)	148.00 (3)	30.07 (3)	4.13 (3)	16.10 (3)	2.67 (3)	87.67	43.5	19.6
52	Bay	1.00 (3)	155.33 (3)	27.37 (3)	2.43 (3)	19.73 (3)	3.33 (3)	71.67	42.8	19.7
49	Centennial	3.00 (2)	159.00 (2)	30.50 (2)	2.50 (2)	15.40 (2)	1.50 (2)	70.50	42.9	19.0
48	Gail	3.33 (3)	168.00 (3)	30.93 (3)	1.93 (3)	16.90 (3)	2.00 (3)	78.33	44.0	17.7
53	Ware	2.33 (3)	218.00 (3)	18.53 (3)	2.40 (3)	22.03 (3)	2.00 (3)	71.67	45.3	16.5
	Grand mean	1.45	168.77	39.23	4.04	15.75	2.43	81.57		
	Standard error of cultivar mean	.85	31.12	14.28	1.93	3.75	1.02	11.77		
	Coefficient of variation (%)	59.09	18.44	36.41	47.89	23.80	41.89	14.43		
	5% LSD Cultivar means (*****=ns)	*****	*****	*****	*****	*****	*****	*****		

Table 137. Experiment 120, 1981

Country: SOMALIA
Region: AFRICA
Latitude: 3° 30′ N
Longitude: 46° 35′ E
Zone: 1
Elevation: 50 m

Site: AFGOI, SOMALIA
Cooperator(s): SALAD GIUMALE OSSOBLE

Date planted: October 19, 1981
Date harvested: January 1982
Soil type: sand 13%, silt 17%, clay 70%, pH 7.8
Fertilizer used (kg/ha): N 25.0, P 25.0, K 25.0
Amount of moisture: 279.9 mm
Number of irrigations: 4

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
8	ICA Caribe	2446.32	33.50	131.00					78.55	1.50
40	IGH 24	2421.32	45.50	121.00					63.20	1.25
39	IGH 23	2244.20	43.50	114.00					61.05	1.50
9	Jupiter	2165.02	60.50	86.50					55.00	1.75
2	UFV-1	2146.26	33.00	109.00					32.00	1.00
7	ICA Tunia	2035.82	29.25	105.00					44.50	1.00
3	SJ-2	1602.40	33.00	101.00					53.95	1.50
10	Improved Pelican	1562.81	29.75	99.50					51.10	1.50
43	Alamo	1550.31	42.00	106.00					35.35	1.00
46	Ecuador 2	1527.39	34.00	108.00					38.70	1.00
37	G 2120	1489.88	47.00	100.50					76.27	1.25
44	Foster	1327.35	26.00	86.00					22.85	1.00
13	Bossier	1264.84	26.00	97.00					24.10	1.00
58	Williams 79	1162.73	26.00	86.00					34.20	1.00
41	UFV-1 (BP-2)	866.84 (3)	30.50	100.33 (3)					50.93 (3)	1.33 (3)
19	Davis	531.36	30.00	93.00					20.50	1.00
	Grand mean	1658.93	35.59	102.78					46.32	1.22
	Standard error of cultivar mean	712.52	4.47	16.44					19.41	.42
	Coefficient of variation (%)	42.95	25.11	15.99					41.90	34.29
	5% LSD Cultivar means (*****=ns)	*****	12.73	*****					*****	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
8	ICA Caribe	3.50	219.00	52.25	9.20	15.20	2.00	61.00	42.6	19.8
40	IGH 24	1.25	202.25	37.50	9.75	15.97	2.25	55.00	36.7	23.4
39	IGH 23	1.75	219.50	27.50	9.20	18.02	2.75	71.50	42.6	20.4
9	Jupiter	1.75	229.25	26.00	8.35	18.40	3.25	69.00	40.4	22.4
2	UFV-1	1.00	292.00	18.75	8.25	17.10	2.50	71.00	41.6	21.3
7	ICA Tunia	1.25	277.75	23.25	8.95	19.77	2.75	78.50		
3	SJ-2	1.75	214.00	29.75	8.85	13.47	1.75	77.00	38.5	27.9
10	Improved Pelican	1.50	299.75	19.50	10.35	14.02	2.75	65.50	41.7	21.3
43	Alamo	1.25	239.75	19.75	9.80	13.85	1.75	77.50	38.2	22.7
46	Ecuador 2	1.25	154.00	25.75	8.40	18.45	2.50	72.50	42.6	21.0
37	G 2120	1.25	284.25	32.75	9.65	7.27	1.75	96.50	42.1	18.8
44	Foster	1.00	230.50	18.50	6.95	14.77	3.00	74.00	34.8	23.4
13	Bossier	1.00	204.00	17.50	6.20	15.87	2.75	59.00	41.4	21.0
58	Williams 79	1.00	168.25	18.25	7.15	18.92	3.25	86.50	37.9	22.4
41	UFV-1 (BP-2)	1.33 (3)	213.67 (3)	24.33 (3)	9.27 (3)	13.57 (3)	2.33 (3)	64.67	33.1	24.1
19	Davis	2.00	50.50	26.00	5.30	15.55	2.25	74.00	34.5	23.4
	Grand mean	1.49	218.73	26.11	8.46	15.67	2.48	72.19		
	Standard error of cultivar mean	.76	68.89	10.54	1.78	3.42	.64	15.76		
	Coefficient of variation (%)	50.89	31.49	40.38	20.99	21.83	26.01	21.82		
	5% LSD Cultivar means (*****=ns)	*****	*****	*****	*****	*****	*****	*****		

Table 138. Experiment 712, 1980

Country: SRI LANKA
Region: ASIA
Latitude: 8° 5′ N
Longitude: 83° 28′ E
Zone: 1
Elevation: 138 m

Site: MAHA ILLUPALLAMA
Cooperator(s): CECIL D. DHARMASENA and B. M. KARUNARATNE

Date planted: April 30, 1980
Date harvested: August 1980
Soil type: sandy clay loam, pH 6.0
Fertilizer used (kg/ha): N 21, P 26, K 24.9
Amount of moisture: 245.6 mm
Number of irrigations: 15

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
16	Cobb	2215.00	31.25	99.00	5.00	2.75	47.50	60.00	29.20	1.50
15	Ransom	2047.50	31.25	94.25	4.25	3.25	62.50	55.00	27.90	1.00
9	Jupiter	1927.50	36.25	115.00	4.75	3.25	15.00	80.00	47.50	1.00
63	Hutton	1907.50	31.50	96.50	5.00	2.75	28.75	65.00	26.30	1.00
2	UFV-1	1875.62	35.25	124.00	4.75	3.50	30.00	75.00	31.33	1.00
14	Williams	1860.00	32.50	90.00	5.00	3.50	8.75	58.75	35.70	1.00
13	Bossier	1843.12	31.25	95.00	4.50	3.75	43.75	48.75	21.10	1.00
19	Davis	1817.50	31.00	95.50	4.75	2.75	27.50	90.00	28.80	1.00
7	ICA Tunia	1815.62	33.00	110.00	4.25	3.25	48.75	87.50	37.30	1.00
37	G 2120	1785.62	48.50	103.00	4.25	3.25	52.50	71.25	78.70	2.00
44	Foster	1783.75	31.00	96.50	5.00	3.75	23.75	63.75	21.70	1.00
43	Alamo	1704.37	41.75	102.00	5.00	4.25	8.75	45.00	30.35	1.00
3	SJ-2	1651.25	35.25	94.00	4.50	3.00	31.25	81.25	58.45	1.00
45	ICA L-109	1580.00	46.75	108.00	4.50	3.00	43.75	86.25	45.85	1.00
10	Improved Pelican	740.62	44.25	107.25	5.00	3.50	6.25	78.75	44.85	1.00
8	ICA Caribe	120.62	44.00	140.00	4.50	3.25	32.50	91.25	80.35	2.75
	Grand mean	1667.23	36.55	104.38	4.69	3.30	31.95	71.09	40.34	1.20
	Standard error of cultivar mean	166.10	.51	1.01	.21	.43	10.81	10.32	4.59	.14
	Coefficient of variation (%)	19.93	2.78	1.93	8.85	26.01	67.65	29.04	22.74	23.84
	5% LSD Cultivar means (*****=ns)	473.13	1.45	2.86	.59	*****	30.79	29.40	13.07	.41

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
16	Cobb	1.50	174.25	26.40	7.10	17.20	2.50			
15	Ransom	1.25	162.75	16.45	8.50	15.54	3.25			
9	Jupiter	1.25	192.25	22.05	11.30	17.20	4.00			
63	Hutton	1.00	116.25	21.85	8.60	16.66	2.75			
2	UFV-1	1.00	154.75	28.95	9.75	14.00	2.50			
14	Williams	1.00	109.00	32.45	6.80	15.41	1.75			
13	Bossier	1.00	140.50	26.90	6.15	14.56	2.75			
19	Davis	1.25	177.50	14.95	9.05	15.19	3.00			
7	ICA Tunia	1.50	135.75	22.45	9.68	17.52	2.25			
37	G 2120	1.75	138.50	39.60	12.80	8.98	2.25			
44	Foster	1.00	195.25	14.45	8.90	14.09	2.50			
43	Alamo	1.00	146.25	16.90	8.40	16.48	2.75			
3	SJ-2	1.25	184.00	25.20	13.50	12.78	2.50			
45	ICA L-109	1.75	115.50	42.05	10.45	13.31	3.75			
10	Improved Pelican	1.75	36.75	46.45	7.95	13.91	3.00			
8	ICA Caribe	1.75	107.00	7.10	25.45	11.78	3.75			
	Grand mean	1.31	142.89	25.26	10.27	14.66	2.83			
	Standard error of cultivar mean	.21	25.74	4.67	1.55	.69	.35			
	Coefficient of variation (%)	31.62	36.03	36.99	30.23	9.42	24.77			
	5% LSD Cultivar means (*****=ns)	.59	73.33	13.31	4.42	1.97	1.00			

Table 139. Experiment 714, 1980

Country: SRI LANKA
Region: ASIA
Latitude: 9° 6′ N
Longitude: 0° 3′ E
Zone: 1
Elevation: 1 m

Site: THIRUNELVELY, AGRIC. RESEARCH STATION
Cooperator(s): BEN N. EMERSON

Date planted: June 18, 1980
Date harvested: September 1980
Fertilizer used (kg/ha): N 20, P 26.4, K 33.2
Amount of moisture: 483.3 mm and irrigated water
Number of irrigations: 23
Substitute cultivars: PB-1 and Hark

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
44	Foster	2859.37	24.00	79.00	2.95	1.48	100.00	100.00	63.58	1.00
7714	PB-1	2850.00	30.50	94.00	2.95	1.28	100.00	97.50	58.20	2.50
63	Hutton	2525.00	24.25	94.00	2.90	1.75	92.50	98.75	43.35	1.00
7	ICA Tunia	2381.25	28.00	102.00	2.48	1.78	98.75	97.50	80.00	1.00
2	UFV-1	2343.75	30.75	96.00	3.03	2.08	97.50	100.00	62.20	1.00
43	Alamo	2250.00	34.50	112.00	3.38	2.30	98.75	100.00	68.53	1.00
41	UFV-1 (BP-2)	2187.50	28.00	102.00	3.03	1.78	97.50	100.00	92.03	2.00
19	Davis	2150.00	24.50	94.00	2.60	1.55	100.00	100.00	56.25	1.00
14	Williams	2075.00	24.00	79.00	2.65	2.30	98.75	90.00	89.47	1.00
39	IGH 23	1921.87	34.25	108.00	3.20	2.35	97.50	93.75	74.53	1.00
45	ICA L-109	1875.00	35.25	96.00	2.65	1.35	96.25	100.00	88.35	2.00
9	Jupiter	1562.50	30.00	96.00	3.23	2.35	100.00	98.75	77.43	2.00
37	G 2120	1318.75	37.00	96.00	3.48	1.90	100.00	97.50	112.43	1.00
40	IGH 24	1218.75	42.00	112.00	3.25	2.30	93.75	97.50	76.73	1.25
7715	Hark	1118.75	24.00	79.00	2.93	2.35	97.50	91.25	51.73	1.00
8	ICA Caribe		41.25	129.00	2.85	2.35	98.75	92.50	127.80	2.50
	Grand mean	1914.84	30.77	98.00	2.97	1.95	97.97	97.19	76.41	1.39
	Standard error of cultivar mean	314.51	1.44		.21	.19	1.77	2.00	7.83	.32
	Coefficient of variation (%)	32.85	9.34		14.17	19.83	3.60	4.11	20.49	46.36
	5% LSD Cultivar means (*****=ns)	895.84	4.09		*****	.55	*****	5.69	22.30	.92

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
44	Foster	1.00	201.75	22.50		12.35	1.00			
7714	PB-1	1.00	180.25	42.30		12.98	1.00			
63	Hutton	1.00	200.75	23.55		18.05	1.00			
7	ICA Tunia	1.00	202.00	21.15		20.68	1.00			
2	UFV-1	1.00	200.25	33.25		15.28	1.00			
43	Alamo	1.00	194.25	23.50		14.83	1.25			
41	UFV-1 (BP-2)	1.00	180.25	54.50		16.35	1.00			
19	Davis	1.00	188.50	21.45		18.23	1.50			
14	Williams	1.00	188.75	16.20		16.83	1.00			
39	IGH 23	1.00	193.25	33.00		17.05	1.00			
45	ICA L-109	2.00	170.25	38.00		10.90	1.00			
9	Jupiter	1.00	196.75	25.45		16.68	1.00			
37	G 2120	1.00	194.75	60.25		7.78	1.00			
40	IGH 24	1.00	158.00	49.75		16.13	3.00			
7715	Hark	1.00	91.50	26.90		14.15	1.00			
8	ICA Caribe	1.00	187.75	17.85			1.00			
	Grand mean	1.06	183.06	31.85		14.26	1.17			
	Standard error of cultivar mean		11.61	4.49		.21	.10			
	Coefficient of variation (%)		12.68	28.18		2.90	16.60			
	5% LSD Cultivar means (*****=ns)		33.07	12.78		.59	.28			

Table 140. Experiment 715, 1980

Country: SRI LANKA
Region: ASIA
Latitude: 7° 1′ N
Longitude: 80° E
Zone: 1
Elevation: 457 m

Site: C.A.R.I. GANNORUWA
Cooperator(s): M. E. R. PINTO, C. DHARMASENA, B. M. KARUNARATNE

Date planted: May 16, 1980
Date harvested: August 1980
Fertilizer used (kg/ha): N 23, P 30, K 50
Amount of moisture: 577 mm
Substitute cultivars: Cobb and Hutton

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
16	Cobb	3481.25	29.00	104.50			100.00	72.50	64.67	2.00
19	Davis	3465.62	29.00	95.75			95.00	72.50	50.74	2.00
44	Foster	3440.62	24.00	86.50			98.75	75.00	41.78	2.00
7	ICA Tunia	3356.25	31.75	92.25			95.00	80.00	71.71	2.25
9	Jupiter	3153.12	41.00	108.50			95.00	81.25	79.37	3.00
2	UFV-1	3143.75	35.00	100.50			97.50	73.75	67.77	3.00
10	Improved Pelican	3062.50	36.00	102.75			95.00	70.00	93.19	3.25
40	IGH 24	3040.62	49.25	111.75			98.75	73.75	97.25	2.50
41	UFV-1 (BP-2)	3009.37	31.00	101.50			98.75	81.25	93.73	4.00
8	ICA Caribe	3006.25	38.00	128.75			97.50	72.50	102.07	4.00
45	ICA L-109	2900.00	48.00	107.50			100.00	87.50	89.28	2.00
3	SJ-2	2706.25	34.00	93.75			95.00	75.00	88.45	4.00
14	Williams	2671.87	23.75	83.00			95.00	67.50	58.09	2.00
43	Alamo	2350.00	48.00	97.00			95.00	93.75	71.75	3.50
63	Hutton	2265.62	25.50	90.50			100.00	57.50	46.84	2.00
37	G 2120	2096.87	49.25	94.00			95.00	81.25	105.52	3.50
	Grand mean	2946.88	35.78	99.91			96.95	75.94	76.39	2.81
	Standard error of cultivar mean	193.82	.67	2.90			2.84	6.23	4.45	.16
	Coefficient of variation (%)	13.15	3.77	5.81			5.86	16.41	11.64	11.09
	5% LSD Cultivar means (*****=ns)	552.09	1.92	8.26			*****	*****	12.67	.44

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
16	Cobb	1.25	196.75	20.28	12.43	17.58	3.25	84.00		
19	Davis	1.75	191.50	19.43	13.79	21.30	4.00	59.00		
44	Foster	1.25	198.75	20.95	11.75	18.55	3.25	78.00		
7	ICA Tunia	1.00	198.00	23.00	17.52	20.38	2.75	95.75		
9	Jupiter	2.00	178.25	26.25	21.55	23.83	2.75	93.75		
2	UFV-1	2.00	185.25	26.10	15.87	18.43	2.00	96.50		
10	Improved Pelican	2.00	163.50	41.20	15.59	16.30	3.00	88.00		
40	IGH 24	2.00	178.50	54.90	15.06	21.13	2.50	88.00		
41	UFV-1 (BP-2)	2.00	180.75	39.60	18.25	18.33	2.50	94.50		
8	ICA Caribe	1.00	165.50	40.05	17.76	16.03	2.00	98.00		
45	ICA L-109	2.00	187.75	51.18	20.52	14.55	2.25	94.75		
3	SJ-2	2.00	171.25	35.13	11.67	15.08	3.25	86.00		
14	Williams	2.00	198.25	13.93	14.09	23.70	2.25	77.50		
43	Alamo	2.00	186.25	28.15	14.31	19.78	2.25	90.50		
63	Hutton	2.00	200.00	19.23	15.02	21.53	5.00	48.00		
37	G 2120	2.00	194.50	62.63	13.71	7.80	2.00	97.00		
	Grand mean	1.77	185.92	32.62	15.55	18.39	2.81	85.58		
	Standard error of cultivar mean	.10	5.11	2.59	1.03	.90	.29	2.53		
	Coefficient of variation (%)	11.80	5.49	15.86	13.21	9.77	20.78	5.90		
	5% LSD Cultivar means (*****=ns)	.30	14.55	7.37	2.93	2.56	.83	7.20		

Table 141. Experiment 997, 1980

Country: SRI LANKA
Region: ASIA
Latitude: 8° 5′ N
Longitude: 80° 28′ E
Zone: 1
Elevation: 138 m

Site: MAHA ILLUPALLAMA
Cooperator(s): CECIL DHARMASENA, B. M. KARUNARATNE, M. E. R. PINTO

Date planted: November 18, 1980
Date harvested: March 1981
Soil type: sandy clay loam, pH 6.5
Fertilizer used (kg/ha): N 21, P 25, K 25
Amount of moisture: 324 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
43	Alamo	2778.12							51.15	1.00
10	Improved Pelican	2442.00							67.33	1.00
3	SJ-2	2401.75							70.48	1.50
8	ICA Caribe	2307.50							57.23	1.00
2	UFV-1	2168.75							32.68	1.00
7	ICA Tunia	2106.87							38.15	1.00
13	Bossier	2094.50							28.43	1.50
37	G 2120	2069.37							90.00	3.25
9	Jupiter	2045.00							50.10	1.00
45	ICA L-109	1926.25							46.15	1.00
14	Williams	1813.12							38.50	1.00
51	Celest	1446.25							27.93	1.00
16	Cobb	1351.87							25.25	1.00
15	Ransom	1348.75							24.58	2.50
44	Foster	1120.00							22.18	1.00
63	Hutton	846.87							21.25	1.00
	Grand mean	1891.69							43.21	1.30
	Standard error of cultivar mean	199.87							3.23	.26
	Coefficient of variation (%)	21.13							14.96	39.95
	5% LSD Cultivar means (*****=ns)	569.33							9.20	.74

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
43	Alamo	1.00	125.00	35.25	9.13	16.73				
10	Improved Pelican	1.00	132.00	41.03	9.93	15.75				
3	SJ-2	1.00	131.75	29.70	10.03	14.88				
8	ICA Caribe	1.00	51.50	26.55	6.58	14.35				
2	UFV-1	1.00	173.00	26.65	7.80	16.23				
7	ICA Tunia	1.00	97.50	31.25	7.08	18.78				
13	Bossier	2.50	150.00	31.40	6.10	16.08				
37	G 2120	2.00	199.25	34.20	11.25	7.40				
9	Jupiter	2.00	112.75	25.20	9.03	18.10				
45	ICA L-109	1.00	87.25	33.35	7.25	12.88				
14	Williams	1.00	123.25	35.70	6.58	17.30				
51	Celest	1.00	119.50	21.50	5.68	16.58				
16	Cobb	1.00	93.50	43.30	5.68	17.35				
15	Ransom	1.00	93.50	25.90	4.48	16.80				
44	Foster	1.75	105.00	37.30	5.95	15.00				
63	Hutton	1.25	51.25	47.50	5.53	19.15				
	Grand mean	1.28	115.38	32.86	7.38	15.83				
	Standard error of cultivar mean	.20	17.83	4.46	.73	.67				
	Coefficient of variation (%)	31.73	30.90	27.13	19.76	8.47				
	5% LSD Cultivar means (*****=ns)	.58	50.77	12.70	2.08	1.91				

Table 142. Experiment 122, 1981

Country: SRI LANKA
Region: ASIA
Latitude: 7° 1' N
Longitude: 80° E
Zone: 1
Elevation: 457 m

Site: C.A.R.I. GANNORUWA
Cooperator(s): M. E. R. PINTO, C. DHARMASNA, B. M. KARUNARATNE

Date planted: May 7, 1981
Date harvested: August 1981
Fertilizer used (kg/ha): N 23.0, P 12.0, K 51.0
Amount of moisture: 872.34 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
9	Jupiter	2625.00	45.25	110.75	4.92	3.37	5.00	95.00	60.60	2.25
8	ICA Caribe	2584.37	39.25	134.00	4.78	2.90	10.00	70.00	100.92	2.75
40	IGH 24	2565.62	49.00	127.50	4.67	3.25	22.50	90.00	76.20	3.25
39	IGH 23	2521.87	45.75	108.50	4.37	3.85	15.00	88.75	68.10	3.75
7	ICA Tunia	2371.87	35.00	113.50	4.20	3.50	25.00	67.50	43.32	2.25
46	Ecuador 2	2290.62	37.50	108.75	4.87	3.07	12.50	70.00	43.10	2.25
3	SJ-2	2196.87	37.50	100.75	4.15	3.02	45.00	48.75	58.85	2.50
2	UFV-1	2175.00	36.00	97.25	4.55	2.80	25.00	52.50	50.70	2.25
19	Davis	2000.00	34.00	74.25	4.32	2.97	30.00	81.25	29.62	2.00
41	UFV-1 (BP-2)	1956.25	35.00	111.00	4.02	3.40	45.00	98.75	57.95	2.50
43	Alamo	1943.75	40.50	100.75	4.75	3.40	6.25	73.75	39.80	2.25
44	Foster	1821.87	25.00	76.00	4.25	3.75	25.00	85.00	24.82	2.00
10	Improved Pelican	1784.37	35.00	96.50	4.25	3.67	35.00	90.00	53.50	2.50
37	G 2120	1731.25	53.00	104.00	4.10	3.50	37.50	70.00	84.87	3.00
13	Bossier	1684.37	26.00	85.50	4.47	3.45	25.00	97.50	26.25	2.00
58	Williams 79	1209.37	24.00	81.25	4.32	3.67	37.50	86.25	25.80	2.00
	Grand mean	2091.41	37.36	101.89	4.44	3.35	25.08	79.06	52.78	2.47
	Standard error of cultivar mean	153.66	.34	5.86	.15	.32	7.63	8.76	4.72	.24
	Coefficient of variation (%)	14.69	1.83	11.50	6.94	19.28	60.89	22.16	17.90	19.51
	5% LSD Cultivar means (*****=ns)	437.68	.97	16.68	.44	*****	21.75	24.95	13.46	.69

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
9	Jupiter	1.25	193.25	23.95	15.87	18.05	3.00	83.75		
8	ICA Caribe	1.00	198.25	42.90	15.30	14.10	3.75	66.75		
40	IGH 24	1.00	185.50	28.45	17.42	18.80	4.75	42.50		
39	IGH 23	1.00	183.75	25.20	18.95	17.72	3.00	77.25		
7	ICA Tunia	1.00	187.75	16.90	13.43	24.77	5.00	30.50		
46	Ecuador 2	1.00	180.25	21.05	13.25	20.02	3.75	62.50		
3	SJ-2	1.00	180.50	27.40	14.95	16.05	4.00	38.25		
2	UFV-1	1.00	193.50	26.65	14.45	16.90	4.00	79.00		
19	Davis	1.00	195.25	14.80	9.87	21.15	3.50	83.25		
41	UFV-1 (BP-2)	1.00	176.75	28.70	14.60	17.82	4.50	37.75		
43	Alamo	1.00	190.50	25.55	11.05	18.02	3.50	69.75		
44	Foster	1.00	180.00	17.45	8.97	17.82	4.25	92.25		
10	Improved Pelican	1.00	184.50	19.65	14.30	17.97	4.00	48.75		
37	G 2120	1.00	185.75	50.95	14.77	8.12	2.00	98.50		
13	Bossier	1.00	194.00	15.45	10.18	19.65	3.25	88.00		
58	Williams 79	1.00	183.00	10.45	9.35	22.07	4.00	80.25		
	Grand mean	1.02	187.03	24.72	13.55	18.07	3.77	67.44		
	Standard error of cultivar mean	.06	4.70	2.51	.87	.60	.32	11.21		
	Coefficient of variation (%)	12.31	5.02	20.33	12.81	6.67	17.06	33.25		
	5% LSD Cultivar means (*****=ns)	*****	*****	7.16	2.47	1.72	.92	31.93		

Table 143. Experiment 124, 1981

Country: SRI LANKA
Region: ASIA
Latitude: 8° 5′ N
Longitude: 83° 28′ E
Zone: 1
Elevation: 138 m

Site: MAHA ILLUPALLAMA
Cooperator(s): CECIL DHARMASENA, B. M. KARUNARATNE, M. E. R. PINTO

Date planted: April 29, 1981
Date harvested: August 1981
Soil type: sandy clay-loam
Fertilizer used (kg/ha): N 21.0, P 26.2, K 25.0
Amount of moisture: 228.50 mm
Number of irrigations: 25

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
8	ICA Caribe		45.25		4.00	3.75	85.00	37.50		
41	UFV-1 (BP-2)	2356.87	34.00	112.75	3.00	3.00	77.50	68.75	64.05	1.00
44	Foster	2083.12	30.00	103.00	2.75	3.50	85.00	76.25	30.57	1.00
10	Improved Pelican	1997.50	35.75	100.75	3.25	3.25	72.50	80.00	54.22	1.25
244	AJ-2	1937.50	35.75	103.00	3.25	3.25	53.75	81.25	59.60	1.00
7	ICA Tunia	1835.62	33.25	115.50	3.25	3.00	85.00	71.25	34.65	1.00
37	G 2120	1826.25	49.00	97.50	2.75	2.25	86.25	80.00	74.15	1.00
2	UFV-1	1804.37	33.75	111.00	3.25	3.25	77.50	75.00	40.10	1.00
43	Alamo	1795.00	44.25	109.50	3.75	4.00	62.50	42.50	31.55	1.00
40	IGH 24	1793.12	46.25	118.00	4.00	4.00	85.00	65.00	58.80	1.00
9	Jupiter	1768.75	68.25	112.75	3.50	3.50	75.00	50.00	46.35	1.00
19	Davis	1696.25	34.75	105.00	2.25	2.50	95.00	92.50	28.02	1.00
39	IGH 23	1624.37	46.00	118.00	3.00	3.75	80.00	55.00	51.32	1.00
13	Bossier	1438.75	28.75	98.00	3.25	3.25	86.25	77.50	25.97	1.00
58	Williams 79	1378.75	30.50	95.00	3.75	4.00	65.00	53.75	27.57	1.00
46	Ecuador 2	1070.00	38.00	113.75	3.75	3.75	68.75	50.00	42.65	1.00
	Grand mean	1760.42	39.59	107.57	3.30	3.37	77.50	66.02	44.64	1.02
	Standard error of cultivar mean	277.27	5.69	1.99	.27	.30	7.04	8.58	3.73	.06
	Coefficient of variation (%)	31.50	28.73	3.71	16.35	17.74	18.16	25.99	16.70	12.70
	5% LSD Cultivar means (*****=ns)	*****	16.20	5.69	.77	.85	20.04	24.43	10.64	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
8	ICA Caribe									
41	UFV-1 (BP-2)	1.00	178.75	21.30	12.77	19.82	3.00	47.50		
44	Foster	1.00	169.50	14.20	9.15	17.30	3.00	36.25		
10	Improved Pelican	1.00	177.75	21.00	9.85	17.45	3.00	45.75		
244	AJ-2	1.00	168.00	19.25	13.60	18.62	3.00	48.25		
7	ICA Tunia	1.00	199.75	12.80	11.22	20.85	3.50	27.75		
37	G 2120	1.00	200.00	28.47	15.70	8.40	3.00	47.75		
2	UFV-1	1.00	200.00	15.95	11.80	15.27	2.75	46.25		
43	Alamo	1.00	186.50	12.90	8.60	15.10	2.75	47.00		
40	IGH 24	1.00	170.25	20.85	15.07	15.77	2.50	44.75		
9	Jupiter	1.00	173.75	15.85	15.52	18.75	3.00	46.00		
19	Davis	1.00	126.00	16.35	8.72	17.90	2.25	33.25		
39	IGH 23	1.00	176.00	17.20	17.85	18.15	3.00	44.25		
13	Bossier	1.00	188.50	16.60	5.05	17.22	3.00	37.75		
58	Williams 79	1.00	156.75	14.20	8.05	19.10	3.00	33.25		
46	Ecuador 2	1.00	65.25	19.90	8.90	17.42	3.00	44.00		
	Grand mean	1.00	169.12	17.79	11.46	17.14	2.92	41.98		
	Standard error of cultivar mean	0.00	17.34	2.26	1.68	.59	.26	2.52		
	Coefficient of variation (%)	0.00	20.51	25.37	29.33	6.85	17.86	12.00		
	5% LSD Cultivar means (*****=ns)	0.00	49.50	6.44	4.80	1.68	*****	7.19		

Table 144. Experiment 130, 1981

Country: SRI LANKA
Region: ASIA
Latitude: 8° N
Longitude: 83° 28′ E
Zone: 1
Elevation: 138 m

Site: MAHA ILLUPALLAMA
Cooperator(s): CECIL DHARMASENA, B. M. KARUNARATNE, M. E. R. PINTO

Date planted: October 23, 1981
Date harvested: January 1982
Soil type: 6.9 pH, sandy loam
Fertilizer used (kg/ha): N 20.0, P 60.0, K 30.0

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
46	Ecuador 2	3036.87	30.75	85.25	2.75	2.25	66.25	66.25	59.57	.33 (3)
9	Jupiter	2785.00	39.00	88.00	2.75	2.25	80.00	70.00	66.72	1.50
13	Bossier	2778.12	30.00	79.25	1.75	2.00	85.00	70.00	53.32	2.50
2	UFV-1	2770.62	28.00	80.00	2.75	2.25	60.00	66.25	42.07	.50
8	ICA Caribe	2660.00	30.50	88.00	2.25	2.00	76.25	63.75	68.72	0.00
43	Alamo	2604.37	38.75	81.25	3.25	2.50	73.75	66.25	54.40	2.00
39	IGH 23	2565.00	40.00	87.50	2.25	1.50	70.00	66.25	74.65	2.25
41	UFV-1 (BP-2)	2547.50	28.25	80.00	2.75	2.00	78.75	65.00	59.42	.67 (3)
10	Improved Pelican	2393.75	29.50	78.75	3.75	2.00	70.00	65.00	62.95	1.67 (3)
19	Davis	2337.50	27.25	79.50	1.50	1.75	91.25	77.50	31.07	0.00 (3)
40	IGH 24	2115.00	42.00	86.50	2.50	1.50	57.50	76.25	72.92	.75
3	SJ-2	2102.12	30.00	78.25	2.75	1.75	70.00	66.25	64.35	3.25
37	G 2120	2033.12	42.00	76.50	2.00	1.50	82.50	63.75	88.07	2.50
44	Foster	1852.50	23.00	75.50	2.00	1.00	70.00	90.00	27.17	0.00 (1)
14	Williams	1471.25	22.75	76.25	2.75	2.50	72.50	70.00	35.57	0.00 (1)
7	ICA Tunia	1444.37	28.50	82.00	3.00	1.50	43.75	63.75	42.30	
	Grand mean	2343.57	31.89	81.41	2.55	1.89	71.72	69.14	56.46	1.38
	Standard error of cultivar mean	193.16	.43	.69	.26	.24	6.20	5.77	3.31	1.40
	Coefficient of variation (%)	16.48	2.69	1.70	20.24	25.34	17.29	16.68	11.71	101.31
	5% LSD Cultivar means (*****=ns)	550.20	1.22	1.97	.73	.68	17.66	*****	9.42	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
46	Ecuador 2		152.50	20.10	13.47	16.62	2.50	87.25		
9	Jupiter		145.25	23.45	13.55	17.37	3.75	95.50		
13	Bossier	0.00 (1)	175.25	18.85	9.77	18.32	2.00	100.00		
2	UFV-1		198.75	20.25	10.10	15.62	2.25	84.75		
8	ICA Caribe	0.00 (1)	102.00	22.85	8.70	13.50	1.50	67.75		
43	Alamo		169.50	18.10	13.67	14.12	2.50	97.25		
39	IGH 23		152.25	19.50	15.57	17.20	2.75	76.00		
41	UFV-1 (BP-2)	0.00 (1)	162.75	19.10	9.02	15.07	2.25	71.25		
10	Improved Pelican	0.00 (2)	158.50	26.05	10.30	14.57	2.25	91.50		
19	Davis	0.00 (3)	142.75	17.60	6.55	19.82	2.25	68.00		
40	IGH 24	0.00 (1)	167.00	17.50	13.75	13.40	2.00	72.00		
3	SJ-2	0.00 (1)	159.50	20.60	9.95	14.07	2.00	78.00		
37	G 2120		196.25	30.25	13.90	5.80	2.00	97.25		
44	Foster		146.00	14.70	7.32	18.25	2.75	99.00		
14	Williams		103.50	14.10	6.57	20.60	3.00	77.25		
7	ICA Tunia	0.00 (1)	42.75	23.80	6.97	18.02	3.00	84.00		
	Grand mean	0.00	148.41	20.42	10.57	15.77	2.42	84.17		
	Standard error of cultivar mean	0.00	9.07	2.15	.71	.52	.25	.85		
	Coefficient of variation (%)		12.23	21.07	13.42	6.56	20.94	2.02		
	5% LSD Cultivar means (*****=ns)	0.00	25.84	6.13	2.02	1.47	.72	2.42		

Table 145. Experiment 726, 1980

Country: SUDAN
Region: AFRICA
Latitude: 12° 44′ N
Longitude: 34° 7′ E
Zone: 4
Elevation: 435.6 m

Site: ABU-NAAMA
Cooperator(s): FATHI MOHAMAD KHALIFA

Date planted: June 21, 1980
Date harvested: September 1980
Soil type: clay 68%, pH 9.1, OM 0.41%
Fertilizer used (kg/ha): N 25, P 25
Amount of moisture: 383.6 mm
Substitute cultivars: Semmes and Hardee

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
2	UFV-1	2540.09	36.00	115.25	4.25	4.00	61.25	78.75	46.75	3.25
19	Davis	2515.09	28.25	102.75	4.00	4.00	82.50	75.00	41.45	2.25
13	Bossier	2408.81	26.25	104.25	4.00	4.00	78.75	80.00	30.20	1.50
15	Ransom	2323.38	25.75	107.00	4.00	3.50	78.75	67.50	32.83	1.25
44	Foster	2317.13	26.25	103.00	4.00	4.00	78.75	72.50	30.95	2.25
16	Cobb	2171.27	25.50	108.25	4.00	4.00	78.75	80.00	40.28	2.25
63	Hutton	2000.40	26.25	105.50	4.00	3.25	78.75	77.50	35.55	2.00
14	Williams	1952.47	26.25	86.00	4.00	4.00	85.00	80.00	45.78	2.00
9	Jupiter	1794.11	38.75	108.75	4.00	4.00	48.75	78.75	71.13	3.25
43	Alamo	1706.59	37.75	107.00	4.00	4.00	66.25	85.00	54.70	3.75
7	ICA Tunia	1687.84	30.25	118.00	4.25	3.75	71.25	78.75	58.33	3.25
203	Semmes	1206.49	46.75	115.25	4.00	4.00	33.75	85.00	56.70	4.50
37	G 2120	1100.22	43.00	100.00	4.00	4.00	57.50	80.00	100.18	4.75
4711	Hardee	1060.63	33.25	117.25	4.00	4.00	51.25	76.25	39.10	2.25
45	ICA L-109	685.55	48.00	141.00	4.00	4.00	62.50	83.75	82.38	3.25
8	ICA Caribe	441.75	51.50	141.00	4.00	4.00	55.00	75.00	105.85	2.50
	Grand mean	1744.49	34.36	111.27	4.03	3.91	66.80	78.36	54.51	2.77
	Standard error of cultivar mean	163.95	2.75	3.36	.09	.21	11.61	5.48	2.78	.31
	Coefficient of variation (%)	18.80	15.98	6.04	4.24	10.92	34.77	13.98	10.20	22.19
	5% LSD Cultivar means (*****=ns)	466.99	7.82	9.56	*****	*****	*****	*****	7.92	.87

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
2	UFV-1	1.25	209.75	28.00	10.15	12.80	3.00	15.00	43.5	22.1
19	Davis	1.75	261.00	23.50	8.73	14.25	2.50	10.00	44.2	20.1
13	Bossier	1.50	195.75	22.00	6.88	16.50	2.75	15.00	44.0	22.5
15	Ransom	1.50	231.25	24.50	7.45	18.75	3.25	5.00	42.0	24.2
44	Foster	1.25	239.50	25.50	7.13	15.73	2.75	20.00	43.2	23.7
16	Cobb	3.50	220.00	29.25	7.50	14.25	2.75	10.00	41.9	23.4
63	Hutton	1.75	168.75	24.50	8.53	18.88	2.75	2.50	44.3	22.4
14	Williams	1.00	227.75	14.50	9.50	17.75	1.75	10.00	41.6	23.0
9	Jupiter	1.00	262.50	31.50	12.65	12.78	4.25	2.50	43.7	23.0
43	Alamo	1.50	261.75	25.50	13.55	13.00	4.25	15.00	44.1	22.6
7	ICA Tunia	1.75	208.00	25.00	11.53	15.40	3.75	2.50	42.8	22.7
203	Semmes	1.25	93.25	36.50	11.38	13.28	3.50	10.00	42.3	21.7
37	G 2120	5.00	260.25	49.50	12.95	6.08	4.00	95.00	46.8	15.5
4711	Hardee	2.25	59.50	45.75	7.25	13.80	3.25	10.00	40.6	23.5
45	ICA L-109	1.75	157.75	45.00	10.05	7.98	4.50	42.50	44.7	19.4
8	ICA Caribe	1.50	133.25	40.25	12.15	6.35	4.75	55.00	44.7	18.8
	Grand mean	1.84	199.38	30.67	9.83	13.60	3.36	20.00		
	Standard error of cultivar mean	.32	17.48	3.11	.77	.62	.40	6.64		
	Coefficient of variation (%)	34.72	17.54	20.26	15.66	9.06	24.08	66.41		
	5% LSD Cultivar means (*****=ns)	.91	49.79	8.85	2.19	1.76	1.15	18.92		

Table 146. Experiment 727, 1980

Country: SUDAN
Region: AFRICA
Latitude: 14° 24′ N
Longitude: 35° 29′ E
Zone: 4
Elevation: 400 m

Site: GEZIRA RESEARCH STATION-WAD MEDANI
Cooperator(s): OSMAN A. A. AGEEB

Date planted: June 15, 1980
Date harvested: September 1980
Soil type: vertisol suleimi series, pH 8.5, OM .5%
Fertilizer used (kg/ha): N 132, P 25
Amount of moisture: 302.3 mm
Number of irrigations: 9
Substitute cultivars: Semmes and TGM-2493

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
44	Foster	2413.40	31.00	94.75	4.75	4.25			28.50	1.00
19	Davis	2407.98	34.00	90.00	5.00	5.00			32.25	1.00
63	Hutton	2320.46	31.00	94.00	5.00	5.00			31.75	1.00
7727	TGM-2493	2197.11	36.00	110.50	5.00	4.75			66.50	1.00
14	Williams	2126.26	24.00	74.00	4.75	4.00			32.50	1.00
43	Alamo	1930.80	47.00	105.00	5.00	4.75			41.50	1.00
2	UFV-1	1556.98	41.25	138.25	5.00	4.75			38.75	1.00
7	ICA Tunia	1454.87	38.00	105.25	4.75	4.50			49.75	1.50
37	G 2120	1254.42	53.00	100.25	5.00	4.25			75.25	2.00
9	Jupiter	1221.49	41.00	134.25	5.00	5.00			59.50	1.00
41	UFV-1 (BP-2)	1009.79	36.00	136.00	5.00	4.75			78.50	1.00
203	Semmes	954.36	47.00	134.75	5.00	5.00			47.50	1.00
8	ICA Caribe	931.44	51.00	147.00	5.00	4.00			100.50	2.50
39	IGH 23	778.91	51.00	138.00	4.75	4.75			73.50	1.00
64	ICA L-125	756.40	48.00	145.50	5.00	4.75			93.25	1.75
40	IGH 24	671.80	59.00	138.50	5.00	4.75			74.50	1.00
	Grand mean	1499.15	41.77	117.88	4.94	4.64			57.75	1.23
	Standard error of cultivar mean	108.96	.30	1.01	.12	.27			1.67	.19
	Coefficient of variation (%)	14.54	1.43	1.72	5.01	11.51			5.78	31.27
	5% LSD Cultivar means (*****=ns)	310.37	.85	2.89	*****	*****			4.75	.55

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
44	Foster	1.00	275.00	25.75	7.50	12.05	1.00		36.3	23.5
19	Davis	1.00	257.00	32.50	7.88	12.95	1.00		39.9	22.6
63	Hutton	1.00	198.75	27.75	7.05	13.90	1.50		38.4	25.7
7727	TGM-2493	2.00	236.75	34.25	11.03	10.45	3.00		33.9	25.4
14	Williams	1.00	269.00	16.00	7.65	17.53	1.00		43.2	22.0
43	Alamo	2.00	279.00	27.25	11.73	9.88	2.50		40.4	24.2
2	UFV-1	2.00	249.25	42.00	10.90	6.75	5.00		42.4	19.6
7	ICA Tunia	1.75	241.00	22.50	10.75	11.45	2.25		37.0	25.2
37	G 2120	1.75	252.50	39.50	13.85	4.45	4.00		43.1	18.9
9	Jupiter	2.75	274.50	33.25	14.63	7.60	5.00		41.0	17.9
41	UFV-1 (BP-2)	2.25	250.75	38.00	15.58	7.48	5.00		42.5	21.2
203	Semmes	2.75	130.00	48.00	11.68	8.83	4.00		44.5	15.6
8	ICA Caribe	1.25	174.25	40.25	18.33	8.38	2.00		43.7	16.5
39	IGH 23	2.75	259.25	33.75	14.60	6.88	5.00		44.6	17.1
64	ICA L-125	1.50	154.75	50.00	15.83	8.58	3.25		42.8	18.0
40	IGH 24	2.00	299.00	43.00	12.55	8.58	4.25		43.0	16.8
	Grand mean	1.80	237.55	34.61	11.97	9.73	3.11			
	Standard error of cultivar mean	.23	16.86	3.90	.68	.47	.14			
	Coefficient of variation (%)	26.01	14.19	22.55	11.32	9.65	9.23			
	5% LSD Cultivar means (*****=ns)	.67	48.01	11.11	1.93	1.34	.41			

Table 147. Experiment 747, 1980

Country: SUDAN
Region: AFRICA
Latitude: 7° N
Longitude: 28° E
Zone: 1
Elevation: 450 m

Site: HALIMA EXP. STATION, WAU
Cooperator(s): ALEXIS B. SAN VALENTIN

Date planted: July 3, 1980
Date harvested: September 1980
Soil type: sand 64.9%, silt 14.0%, clay 20.5%, pH 6.8
Fertilizer used (kg/ha): N 25, P 25, K 25
Amount of moisture: 582 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
10	Improved Pelican	2125.42	32.25	84.75	4.00	2.75	96.25	93.75	77.43	1.75
2	UFV-1	2058.74	30.25	93.50	3.75	2.75	95.00	93.75	36.33	1.25
39	IGH 23	2008.73	25.00	99.75	4.00	3.25	93.75	95.00	65.65	2.25
8	ICA Caribe	1967.06	32.50	114.75	4.00	3.25	92.50	96.25	89.57	1.75
40	IGH 24	1825.36	36.00	107.50	4.00	2.50	85.00	96.25	66.70	2.50
43	Alamo	1808.69	37.00	92.25	4.00	3.50	97.50	97.50	44.78	1.75
41	UFV-1 (BP-2)	1771.19	29.50	92.25	4.00	2.00	87.50	98.75	88.73	2.25
64	ICA L-125	1762.85	33.50	115.75	4.00	2.00	92.50	97.50	83.08	1.75
9	Jupiter	1754.52	31.50	96.00	4.00	2.75	92.50	97.50	65.15	2.00
3	SJ-2	1667.00	32.25	88.00	4.00	3.00	100.00	96.25	53.75	3.00
7	ICA Tunia	1608.65	29.75	95.00	4.00	2.75	95.00	96.25	56.50	1.75
19	Davis	1575.31	28.50	79.75	4.00	3.00	96.25	96.25	32.15	1.50
37	G 2120	1504.47	37.00	94.50	4.00	2.75	96.25	96.25	88.25	3.25
14	Williams	1108.55	23.25	74.00	4.00	3.75	97.50	95.00	43.65	2.00
63	Hutton	950.19	24.50	78.75	4.00	3.25	88.75	98.75	24.30	2.00
44	Foster	866.84	22.25	74.00	4.00	3.50	90.00	93.75	25.90	2.00
	Grand mean	1647.73	30.31	92.53	3.98	2.92	93.52	96.17	58.87	2.05
	Standard error of cultivar mean	206.35	3.24	1.59	.06	.31	3.04	2.45	4.55	.22
	Coefficient of variation (%)	25.05	21.35	3.43	3.14	20.93	6.50	5.09	15.47	21.02
	5% LSD Cultivar means (*****=ns)	587.78	9.22	4.52	*****	.87	*****	*****	12.97	.61

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
10	Improved Pelican	1.50	114.75	52.50	11.43	13.20	1.25		41.7	22.8
2	UFV-1	1.50	117.00	36.75	5.85	16.55	2.50		43.7	22.2
39	IGH 23	1.50	123.50	46.00	12.88	17.65	3.25		43.7	22.6
8	ICA Caribe	2.00	133.00	46.75	10.98	13.93	2.75		46.5	20.2
40	IGH 24	1.25	123.00	46.75	12.05	17.20	3.25		40.1	24.1
43	Alamo	1.00	137.50	31.00	9.90	15.00	2.25		43.2	23.4
41	UFV-1 (BP-2)	1.25	117.75	35.50	11.20	15.58	1.75		42.8	24.2
64	ICA L-125	1.75	97.00	46.75	10.83	14.60	3.75		42.5	23.9
9	Jupiter	1.25	114.50	42.75	12.78	18.40	3.25		42.8	21.7
3	SJ-2	2.25	129.75	42.50	10.98	13.58	2.50		42.5	20.9
7	ICA Tunia	1.75	93.00	32.50	8.95	19.15	3.75		41.9	21.2
19	Davis	1.00	148.25	32.75	7.23	15.78	4.25		41.2	24.1
37	G 2120	1.75	102.50	54.00	9.03	8.30	2.25		45.3	16.4
14	Williams	1.00	116.25	28.75	7.28	16.30	1.25		42.6	24.2
63	Hutton	1.00	111.00	31.25	6.33	17.25	4.50		44.2	22.0
44	Foster	1.00	119.00	26.00	6.63	15.23	3.00		42.6	21.7
	Grand mean	1.42	118.61	39.53	9.64	15.48	2.84			
	Standard error of cultivar mean	.28	8.15	3.53	.77	.68	.49			
	Coefficient of variation (%)	39.16	13.75	17.87	15.92	8.75	34.55			
	5% LSD Cultivar means (*****=ns)	.79	23.22	10.06	2.19	1.93	1.40			

Table 148. Experiment 753, 1980

Country: SUDAN
Region: AFRICA
Latitude: 11° 0′ N
Longitude: 29° 43′ E
Zone: 5
Elevation: 501 m

Site: KADUGLI RESEARCH STATION
Cooperator(s): MUKHTAR MEKKI KANANI

Date planted: July 16, 1980
Date harvested: October 1980
Soil type: heavy clay
Amount of moisture: 509 mm
Number of irrigations: 1 (3.8 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
9	Jupiter	2583.85	45.75	102.00	3.50	3.25	66.25	81.25	61.83	1.50
8	ICA Caribe	2473.41	45.00	110.50	3.00	2.25	76.25	75.00	91.65	2.00
39	IGH 23	2271.29	55.25	107.75	4.00	2.75	70.00	72.50	63.25	1.75
43	Alamo	2267.12	51.75	101.50	4.00	3.00	82.50	75.00	42.35	1.50
40	IGH 24	2233.78	53.50	111.00	3.75	1.00	77.50	83.75	64.00	1.25
64	ICA L-125	2204.61	51.00	111.00	4.50	1.00	76.25	77.50	93.13	2.00
2	UFV-1	2081.67	41.50	105.00	3.25	2.50	82.50	72.50	32.95	1.00
3	SJ-2	1973.31	41.25	101.00	3.50	2.00	88.75	77.50	65.75	2.25
41	UFV-1 (BP-2)	1566.98	38.75	102.50	2.75	2.25	63.75	85.00	76.03	1.75
19	Davis	1562.81	38.00	101.00	3.00	2.50	68.75	77.50	53.55	1.00
7	ICA Tunia	1491.96	38.50	107.00	3.25	2.25	91.25	75.00	51.58	1.00
14	Williams	1385.69	35.00	84.75	3.00	2.25	55.00	63.75	37.28	1.00
37	G 2120	1381.53	59.00	94.00	2.00	1.50	81.25	86.25	69.33	2.25
10	Improved Pelican	1312.76	40.25	90.75	3.75	2.50	96.25	73.75	56.25	1.75
44	Foster	1296.09	32.00	91.75	3.50	2.50	85.00	66.25	24.80	1.00
63	Hutton	1168.98	33.50	98.75	2.25	1.50	51.25	73.75	39.75	1.00
	Grand mean	1828.49	43.75	101.27	3.31	2.19	75.78	76.02	57.72	1.50
	Standard error of cultivar mean	154.91	1.34	1.52	.46	.61	10.78	8.48	6.65	.16
	Coefficient of variation (%)	16.94	6.12	3.00	27.74	55.62	28.45	22.32	23.03	21.94
	5% LSD Cultivar means (*****=ns)	441.25	3.81	4.33	1.31	*****	*****	*****	18.93	.47

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
9	Jupiter	1.00	111.00	40.18	14.83	14.95	3.25	38.75	42.7	23.0
8	ICA Caribe	1.25	135.75	54.70	11.18	11.83	1.00	2.50	45.4	18.3
39	IGH 23	1.50	138.25	49.30	14.65	13.95	2.75	48.25	45.3	19.5
43	Alamo	1.25	109.25	52.40	10.10	12.93	2.25	32.00	43.2	23.1
40	IGH 24	1.00	110.25	46.00	12.63	13.40	2.00	36.00	40.2	22.7
64	ICA L-125	1.50	82.50	79.80	11.18	11.88	2.00	37.75	42.9	20.2
2	UFV-1	1.00	102.00	25.20	8.20	14.25	1.75	38.25	44.9	19.5
3	SJ-2	2.00	134.00	43.45	13.60	11.83	2.25	46.25	42.7	20.3
41	UFV-1 (BP-2)	1.50	115.00	45.25	11.88	13.53	2.50	36.25	44.2	20.8
19	Davis	1.50	128.50	28.95	8.48	15.68	2.50	32.25	44.1	19.7
7	ICA Tunia	1.25	99.75	35.20	10.03	15.93	3.25	22.50	43.9	19.9
14	Williams	2.00	123.25	22.15	7.93	16.03	3.50	7.75	44.0	21.0
37	G 2120	3.50	142.00	41.00	12.70	4.20	2.25	32.75	44.6	16.1
10	Improved Pelican	2.00	106.00	36.65	11.30	11.40	2.00	13.75	44.0	21.5
44	Foster	2.00	132.00	18.80	6.50	14.03	3.00	19.25	43.5	19.9
63	Hutton	1.25	109.00	22.20	6.80	16.65	3.50	19.75	45.3	20.6
	Grand mean	1.59	117.41	40.08	10.75	13.28	2.48	29.00		
	Standard error of cultivar mean	.23	13.90	5.47	1.27	.35	.25	8.45		
	Coefficient of variation (%)	28.73	23.68	27.30	23.61	5.33	20.31	58.29		
	5% LSD Cultivar means (*****=ns)	.65	*****	15.58	3.61	1.01	.72	24.07		

Table 149. Experiment 784, 1980

Country: SUDAN
Region: AFRICA
Latitude: 11° N
Longitude: 29° 43′ E
Zone: 5
Elevation: 501 m

Site: KADUGLI RESEARCH STATION
Cooperator(s): MUKHTAR MEKI KANANI

Date planted: July 7, 1981
Date harvested: September 1981
Amount of moisture: 716 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
64	ICA L-125	2484.46	46.75	117.75	4.00	1.25	77.50	96.25	78.70	2.75
81	Ecuador 1	2349.43	39.50	100.50	4.00	1.75	61.25	93.75	38.00	2.25
40	IGH 24	2274.83	49.50	113.50	4.00	2.25	38.75	95.00	50.45	1.50
39	IGH 23	2206.07	52.00	105.50	4.00	2.75	77.50	95.00	57.80	2.75
2	UFV-1	1981.85	39.00	103.25	3.50	1.75	61.25	88.75	25.85	1.50
41	UFV-1 (BP-2)	1888.09	36.25	100.75	4.00	1.75	43.75	97.50	55.75	2.25
9	Jupiter	1881.00	40.00	103.50	4.00	1.75	46.25	93.75	39.55	2.00
43	Alamo	1818.41	44.00	100.75	4.00	1.75	62.50	86.25	27.10	1.75
3	SJ-2	1613.03	39.00	97.75	4.00	2.25	67.50	98.75	59.10	2.75
16	Cobb	1453.42	29.00	96.00	4.00	4.00	76.25	87.50	22.15	2.25
15	Ransom	1380.28	29.00	96.75	4.00	2.50	75.00	80.00	20.70	1.75
19	Davis	1357.77	31.25	96.50	4.00	3.50	58.75	77.50	23.25	2.50
14	Williams	1315.47	29.75	91.00	3.50	3.00	72.50	62.50	24.20	2.00
44	Foster	1182.11	29.00	94.00	4.00	3.00	76.25	68.75	17.55	1.75
13	Bossier	1160.44	29.00	92.50	4.00	3.50	60.00	75.00	18.20	2.25
37	G 2120	1102.10	53.50	96.25	4.00	1.50	45.00	98.75	179.35	2.50
	Grand mean	1715.55	38.53	100.39	3.94	2.39	62.50	87.19	46.11	2.16
	Standard error of cultivar mean	172.97	1.51	2.24	.17	.56	9.46	5.88	30.63	.25
	Coefficient of variation (%)	20.16	7.86	4.47	8.67	46.75	30.26	13.49	132.86	23.38
	5% LSD Cultivar means (*****=ns)	492.68	4.31	6.39	*****	1.59	26.94	16.76	*****	.72

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
64	ICA L-125	2.25	118.75	65.30	11.70	11.40	2.00	68.50	39.7	21.9
81	Ecuador 1	2.25	120.50	35.40	8.55	16.58	2.75	35.75	41.5	21.7
40	IGH 24	1.25	133.75	41.10	8.10	12.83	1.75	49.50	37.0	22.6
39	IGH 23	2.25	117.50	37.85	7.40	14.35	2.25	62.75	42.0	21.2
2	UFV-1	1.50	131.25	29.80	5.15	15.08	2.75	29.25	42.0	21.2
41	UFV-1 (BP-2)	2.00	122.75	43.05	7.75	13.75	2.00	41.50	39.4	21.8
9	Jupiter	2.00	117.00	33.00	7.75	15.13	2.75	38.25	40.0	21.8
43	Alamo	2.25	113.00	31.00	6.00	12.98	2.00	37.50	42.6	20.9
3	SJ-2	2.50	134.50	40.80	10.00	11.68	1.50	48.75	40.2	21.6
16	Cobb	2.50	136.00	23.80	5.65	14.55	2.00	57.00	38.6	22.8
15	Ransom	2.00	128.75	24.35	4.75	15.45	2.00	53.75	40.2	22.3
19	Davis	2.50	119.00	28.25	5.20	15.28	2.25	20.00	40.3	21.8
14	Williams	1.75	123.50	16.30	5.60	15.28	2.00	70.50	38.7	22.8
44	Foster	2.00	126.00	27.20	4.40	14.38	2.00	27.75	39.3	22.2
13	Bossier	1.75	123.50	23.50	3.90	14.33	2.00	48.25	40.5	21.5
37	G 2120	2.00	140.75	56.15	11.40	5.23	1.25	81.50	43.9	18.2
	Grand mean	2.05	125.41	34.80	7.08	13.64	2.08	48.16		
	Standard error of cultivar mean	.29	6.06	4.58	.81	.55	.26	8.19		
	Coefficient of variation (%)	28.40	9.67	26.29	22.80	8.00	24.67	34.03		
	5% LSD Cultivar means (*****=ns)	*****	*****	13.03	2.30	1.55	.73	23.34		

Table 150. Experiment 835, 1980

Country: SUDAN
Region: AFRICA
Latitude: 11° N
Longitude: 29° 43′ E
Zone: 5
Elevation: 501 m
Site: KADUGLI RESEARCH STATION
Cooperator(s): MUKHTAR MEKI KANANI
Date planted: July 9, 1981
Date harvested: September 1981
Amount of moisture: 519.5 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
2	UFV-1	2627.19	39.00	107.25	4.00	1.50	85.00	92.50	26.90	1.75
43	Alamo	1609.28	44.75	98.00	4.00	2.25	86.25	92.50	30.50	2.00
47	PK-73-94	1483.63	34.00	98.50	3.00	2.25	72.50	88.75	26.15	1.75
19	Davis	1260.67	33.00	97.75	4.00	1.75	82.50	96.25	25.55	1.75
18	Forrest	1093.55	33.75	92.50	4.00	2.50	81.25	75.00	25.70	1.25
14	Williams	996.87	27.00	84.00	2.50	3.00	91.25	72.50	23.55	1.75
49	Centennial	994.78	30.00	91.00	4.00	2.50	90.00	71.25	20.35	2.00
13	Bossier	986.03	28.50	94.50	4.00	3.00	75.00	83.75	17.70	2.25
52	Bay	939.15	27.00	95.25	3.00	3.00	96.25	87.50	18.45	1.50
48	Gail	861.63	32.00	90.50	3.00	2.00	98.75	92.50	19.95	2.00
44	Foster	837.88	28.50	92.00	4.00	2.50	82.50	92.50	15.25	2.25
37	G 2120	831.21	52.00	93.00	3.50	3.00	63.75	83.75	54.15	2.25
50	DeSoto	682.64	27.00	83.75	4.00	2.00	80.00	76.25	20.10	1.75
10	Improved Pelican	638.46	27.00	89.00	4.00	4.00	68.75	86.25	25.15	2.00
51	Celest	622.00	34.75	86.00	3.00	3.00	88.75	67.50	22.85	3.00
53	Ware	331.32	27.00	81.50	4.00	4.00	78.75	93.75	15.05	2.50
	Grand mean	1049.77	32.83	92.16	3.63	2.64	82.58	84.53	24.21	1.98
	Standard error of cultivar mean	200.14	.69	1.05	.34	.40	8.39	9.02	1.53	.23
	Coefficient of variation (%)	38.13	4.18	2.28	18.62	30.11	20.33	21.35	12.62	23.25
	5% LSD Cultivar means (*****=ns)	570.08	1.95	2.99	.96	1.13	*****	*****	4.35	.66

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
2	UFV-1	1.25	116.50	31.75	6.40	14.15	1.00	66.25	43.3	20.7
43	Alamo	1.75	121.50	22.85	6.20	13.70	1.75	64.00	42.3	21.3
47	PK-73-94	2.25	121.50	27.60	8.20	14.63	1.50	62.25	41.5	20.8
19	Davis	2.25	130.25	20.60	6.20	16.53	1.75	61.75	40.7	21.5
18	Forrest	1.25	145.25	22.35	6.95	13.63	2.00	61.00	39.4	22.3
14	Williams	1.50	125.00	14.70	6.15	15.23	1.25	64.25	39.6	22.3
49	Centennial	2.00	131.50	14.60	8.60	13.13	1.00	64.25	41.8	21.2
13	Bossier	2.25	111.00	20.90	3.65	13.33	2.00	55.50	41.3	21.5
52	Bay	2.00	133.75	16.05	6.00	16.83	2.75	31.00	39.4	22.9
48	Gail	2.50	113.25	19.20	5.80	16.23	2.75	43.75	42.9	20.1
44	Foster	2.00	119.50	17.40	5.30	13.85	1.75	50.00	40.1	22.3
37	G 2120	2.25	129.00	44.30	13.25	5.53	1.00	77.00	42.3	19.3
50	DeSoto	1.75	125.00	11.65	7.35	15.53	1.50	64.75	37.5	23.2
10	Improved Pelican	2.00	119.50	14.85	6.70	14.00	1.75	60.50	39.9	21.6
51	Celest	1.25	104.25	14.20	7.60	13.55	2.25	52.00	37.7	22.3
53	Ware	1.25	128.00	9.45	5.55	14.83	2.75	54.75	40.6	21.1
	Grand mean	1.84	123.42	20.15	6.87	14.04	1.80	58.31		
	Standard error of cultivar mean	.22	7.14	2.59	.89	.38	.22	6.88		
	Coefficient of variation (%)	23.49	11.56	25.73	25.82	5.40	24.12	23.59		
	5% LSD Cultivar means (*****=ns)	.62	20.33	7.38	2.53	1.08	.62	19.59		

Table 151. Experiment 151, 1981

Country: SUDAN
Region: AFRICA
Latitude: 14° 24′ N
Longitude: 33° 29′ E
Zone: 4
Elevation: 00 m

Site: GEZIRA RESEARCH STATION, WAD MEDANI
Cooperator(s): OSMAN A. A. AGEEB

Date planted: August 28, 1981
Date harvested: November 1981
Soil type: pH 8.5, OM 05.%, vertisol suleimi series
Fertilizer used (kg/ha): N 26.0, P 25.0
Amount of moisture: 123.7 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
9	Jupiter	1398.20	34.75	84.25	4.75	4.75			34.00	1.00
8	ICA Caribe	1315.68	31.00	88.00	5.00	5.00			41.00	1.00 (3)
43	Alamo	1257.75	34.75	73.00	5.00	5.00			26.00	1.00
7	ICA Tunia	1206.49	27.00	84.00	5.00	5.00			27.75	1.00
204	TGM-249-3	1167.32	30.00	90.75	5.00	5.00			35.50	1.00
2	UFV-1	1157.31	27.00	77.75	5.00	5.00			22.25	1.00
39	IGH 23	1128.98	37.00	87.25	5.00	4.75			34.50	1.00
40	IGH 24	1111.06	37.00	90.25	5.00	5.00			35.75	1.00
41	UFV-1 (BP-2)	1062.71	27.00	75.00	5.00	5.00			32.75	1.00
46	Ecuador 2	1023.54	34.00	80.00	5.00	5.00			27.75	1.00
58	Williams 79	986.03	21.00	69.00	5.00	5.00			21.50	1.00
13	Bossier	976.03	21.00	66.00	5.00	5.00			16.75	1.00
37	G 2120	923.10	39.50	81.75	5.00	5.00			56.50	1.50
203	Semmes	917.27	30.00	84.50	5.00	5.00			29.25	1.00
19	Davis	891.01	26.00	77.75	5.00	5.00			16.50	1.00
44	Foster	860.17	23.00	71.00	5.00	5.00			16.00	1.00
	Grand mean	1086.42	30.00	80.02	4.98	4.97			29.61	1.03
	Standard error of cultivar mean	91.71	.28	.91	.06	.09			1.54	.18
	Coefficient of variation (%)	16.88	1.85	2.28	2.51	3.44			10.42	17.13
	5% LSD Cultivar means (*****=ns)	261.22	.79	2.60	*****	*****			4.39	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
9	Jupiter	1.00	234.00	15.50	10.75	11.17	1.75	66.00		
8	ICA Caribe	1.00 (3)	235.50	19.50	13.25	10.20	1.75	37.00		
43	Alamo	1.00	274.50	13.00	8.25	9.62	2.00	43.00		
7	ICA Tunia	1.00	281.50	12.00	7.25	12.87	2.25	35.00		
204	TGM-249-3	1.00	181.00	22.00	8.25	10.10	1.50	62.00		
2	UFV-1	1.00	324.00	13.50	8.50	10.17	2.00	28.00		
39	IGH 23	1.00	230.50	19.50	10.75	11.50	2.00	28.00		
40	IGH 24	1.00	195.75	15.75	10.00	11.35	2.00	62.00		
41	UFV-1 (BP-2)	1.00	263.00	14.00	8.50	10.12	1.75	60.00		
46	Ecuador 2	1.00	179.50	18.25	8.75	10.32	2.00	53.00		
58	Williams 79	1.00	242.50	11.75	6.75	13.57	1.75	44.00		
13	Bossier	1.00	236.25	15.00	6.25	10.97	1.00	64.00		
37	G 2120	1.50	391.75	19.00	13.00	5.45	1.25	97.00		
203	Semmes	1.00	177.25	18.75	9.00	12.25	1.75	72.00		
19	Davis	1.00	127.25	22.75	6.50	12.82	2.00	38.00		
44	Foster	1.00	226.75	14.50	6.25	11.40	1.50	29.00		
	Grand mean	1.03	237.56	16.55	8.87	10.87	1.77	51.12		
	Standard error of cultivar mean	.18	13.33	1.16	.94	.38	.23	11.94		
	Coefficient of variation (%)	17.13	11.23	14.01	21.23	6.95	25.61	46.72		
	5% LSD Cultivar means (*****=ns)	*****	37.98	3.30	2.68	1.08	.64	34.02		

Table 152. Experiment 998, 1980

Country: SURINAM
Region: SOUTH AMERICA
Site: PARAMARIBO-ZUID
Cooperator(s): J. F. WIENK

Latitude: 5° 30′ N
Longitude: 55° 25′ W

Zone: 1
Elevation: 20 m

Date planted: December 19, 1980
Date harvested: April 1981
Fertilizer used (kg/ha): N 20, P 40, K 20
Amount of moisture: 540 mm
Substitute cultivar: Vada

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
64	ICA L-125	2586.00	40.00	105.50					76.00	
9998	Vada	2512.00	44.50	97.50					85.50	
3	SJ-2	2375.00	34.00	83.00					52.50	
40	IGH 24	2321.00	40.00	101.50					51.50	
10	Improved Pelican	2307.00	34.00	83.00					57.50	
8	ICA Caribe	2199.00	34.00	101.00					72.00	
39	IGH 23	1969.00	39.00	97.00					61.50	
41	UFV-1 (BP-2)	1927.00	29.00	86.00					56.00	
37	G 2120	1919.00	48.00	90.00					83.00	
9	Jupiter	1706.00	34.50	97.00					48.00	
14	Williams	1688.00	27.50	83.00					39.50	
7	ICA Tunia	1619.00	28.00	92.00					49.00	
2	UFV-1	1604.00	34.00	90.00					25.50	
19	Davis	1552.00	28.00	83.00					22.50	
63	Hutton	1532.00	27.00	83.00					22.50	
43	Alamo	1520.00	40.00	90.00					32.00	
	Grand mean	1958.50	35.09	91.41					52.16	
	Standard error of cultivar mean	117.15	.97	2.28					3.46	
	Coefficient of variation (%)	8.46	3.89	3.52					9.38	
	5% LSD Cultivar means (*****=ns)	353.14	2.91	6.86					10.42	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
64	ICA L-125		50.00						42.3	23.1
9998	Vada		50.00						43.7	19.4
3	SJ-2		50.00						42.6	21.6
40	IGH 24		50.00						43.3	22.8
10	Improved Pelican		50.00						39.6	23.9
8	ICA Caribe		50.00						45.1	19.5
39	IGH 23		50.00						43.7	20.6
41	UFV-1 (BP-2)		50.00						41.2	22.9
37	G 2120		50.00						42.2	17.0
9	Jupiter		50.00						43.6	24.2
14	Williams		50.00						41.4	22.0
7	ICA Tunia		50.00							
2	UFV-1		50.00						43.9	21.6
19	Davis		50.00						44.1	21.9
63	Hutton		50.00						44.2	21.1
43	Alamo		50.00						43.7	22.0
	Grand mean		50.00							
	Standard error of cultivar mean									
	Coefficient of variation (%)									
	5% LSD Cultivar means (*****=ns)									

Table 153. Experiment 999, 1980

Country: SURINAM
Region: SOUTH AMERICA
Latitude: 5° 30′ N
Longitude: 55° 25′ W
Zone: 1
Elevation: 20 m
Site: PARMARIBO-ZUID
Cooperator(s): J. F. WIENK
Date planted: July 3, 1980
Date harvested: December 1980
Fertilizer used (kg/ha): N 20, P 40, K 20
Amount of moisture: 470 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
3	SJ-2	1221.00	34.00	87.00					49.50	
10	Improved Pelican	1183.00	44.00	83.50					46.50	
41	UFV-1 (BP-2)	1113.00	32.00	90.50					52.50	
19	Davis	1102.00	31.00	83.50					23.50	
2	UFV-1	1080.00	34.00	87.00					28.50	
7	ICA Tunia	979.00	32.00	92.00					39.00	
63	Hutton	954.00	31.00	87.00					36.50	
14	Williams	852.00	31.00	83.50					34.00	
44	Foster	844.00	31.00	80.00					21.00	
8	ICA Caribe	821.00	37.00	110.00					43.00	
9	Jupiter	817.00	35.00	90.50					37.00	
39	IGH 23	779.00	44.00	95.50					51.00	
43	Alamo	769.00	41.00	87.00					31.50	
37	G 2120	725.00	45.00	95.50					43.00	
64	ICA L-125	638.00	42.00	102.50					38.50	
40	IGH 24	483.00	45.00	95.50					40.00	
	Grand mean	897.50	36.81	90.66					38.44	
	Standard error of cultivar mean	122.53	.75	2.49					3.75	
	Coefficient of variation (%)	19.31	2.88	3.88					13.80	
	5% LSD Cultivar means (*****=ns)	369.35	2.26	7.50					11.31	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
3	SJ-2		50.00							
10	Improved Pelican		50.00							
41	UFV-1 (BP-2)		50.00							
19	Davis		50.00							
2	UFV-1		50.00							
7	ICA Tunia		50.00							
63	Hutton		50.00							
14	Williams		50.00							
44	Foster		50.00							
8	ICA Caribe		50.00							
9	Jupiter		50.00							
39	IGH 23		50.00							
43	Alamo		50.00							
37	G 2120		50.00							
64	ICA L-125		50.00							
40	IGH 24		50.00							
	Grand mean		50.00							
	Standard error of cultivar mean									
	Coefficient of variation (%)									
	5% LSD Cultivar means (*****=ns)									

Table 154. Experiment 144, 1981

Country: TANZANIA
Region: AFRICA
Site: ZANZIBAR
Cooperator(s): A. J. CARPENTER
Latitude: 6° S
Longitude: 38° E
Zone: 1
Elevation: 30 m
Date planted:
Date harvested:

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
58	Williams 79	1637.83	36.00	94.00	4.00	3.75	50.00	50.00	27.25	1.00
19	Davis	1350.27	40.25	105.75	3.50	3.75	53.75	50.00	33.00	1.00
46	Ecuador 2	1302.34	40.00	108.75	4.00	3.75	50.00	50.00	67.50	2.00
10	Improved Pelican	1212.74	41.25	102.25	4.00	3.75	50.00	50.00	52.50	1.50
44	Foster	1108.55	43.50	88.00	3.75	3.75	50.00	50.00	25.75	1.00
13	Bossier	1046.04	33.00	92.50	3.75	3.75	50.00	51.25	24.25	1.00
3	SJ-2	993.95	42.25	111.00	4.00	3.75	37.50	50.00	63.25	2.00
2	UFV-1	987.70	40.25	99.50	3.75	3.25	30.00	51.25	34.25	1.00
41	UFV-1 (BP-2)	960.61	41.00	105.50	4.00	4.25	22.50	43.75	57.75	1.75
9	Jupiter	858.50	46.50	108.75	4.25	3.75	25.00	31.25	59.25	1.75
8	ICA Caribe	858.50	42.25	106.50	4.25	3.50	33.75	68.75	50.00	1.25
40	IGH 24	837.67	49.00	126.25	4.75	4.00	0.00	50.00	71.00	2.50
43	Alamo	754.32	46.50	109.25	4.50	4.00	16.25	26.25	49.75	1.50
37	G 2120	723.06	51.00	112.50	3.75	3.50	33.75	60.00	84.25	2.75
7	ICA Tunia	615.12	43.00	118.50	4.00	3.50	50.00	50.00	60.50	1.25
39	IGH 23	356.32	48.00	111.75	4.50	4.00	17.50	50.00	65.00	2.00
	Grand mean	975.22	42.73	106.30	4.05	3.75	35.62	48.91	51.58	1.58
	Standard error of cultivar mean	169.98	3.37	4.54	.31	.35	13.38	12.74	6.95	.26
	Coefficient of variation (%)	34.86	15.75	8.55	15.44	18.59	75.11	52.08	26.94	33.17
	5% LSD Cultivar means (*****=ns)	484.18	9.59	12.94	*****	*****	*****	*****	19.79	.75

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
58	Williams 79	1.00	289.75	17.25	5.75	20.00	2.50	91.50		
19	Davis	1.00	239.50	15.50	7.00	30.00	2.25	93.25		
46	Ecuador 2	1.00	234.25	22.25	6.75	40.00	2.00	96.50		
10	Improved Pelican	1.00	200.75	16.75	6.50	17.50	2.25	96.50		
44	Foster	1.00	262.75	9.50	6.00	15.00	2.00	97.00		
13	Bossier	1.00	217.50	11.50	4.75	15.00	2.00	96.25		
3	SJ-2	1.00	236.75	24.25	6.25	20.00	2.00	92.75		
2	UFV-1	1.00	267.25	12.75	6.00	16.25	2.00	93.50		
41	UFV-1 (BP-2)	1.00	223.50	20.00	8.25	11.25	2.00	95.50		
9	Jupiter	1.00	194.50	20.25	6.75	20.00	2.00	96.00		
8	ICA Caribe	1.25	198.50	19.00	5.50	20.00	2.00	96.75		
40	IGH 24	1.00	185.75	26.00	10.25	15.00	3.00	96.00		
43	Alamo	1.00	212.00	24.50	5.50	20.00	3.00	91.00		
37	G 2120	1.00	201.50	16.00	6.50	18.75	3.00	98.00		
7	ICA Tunia	1.00	150.50	15.50	7.75	23.75	3.00	95.25		
39	IGH 23	1.00	173.75	23.25	5.75	13.75	2.00	93.75		
	Grand mean	1.02	218.03	18.39	6.58	19.77	2.31	94.97		
	Standard error of cultivar mean	.06	24.21	3.17	.90	1.86	.11	1.27		
	Coefficient of variation (%)	12.31	22.21	34.52	27.51	18.79	9.67	2.67		
	5% LSD Cultivar means (*****=ns)	*****	68.96	9.04	2.58	5.29	.32	3.61		

Table 155. Experiment 763, 1980

Country: THAILAND
Region: ASIA
Latitude: 14° 30′ N
Longitude: 101° 30′ E
Zone: 4
Elevation: 300 m

Site: SUWAN FARM, PAKCHONG, NAKHON RACHSIMA
Cooperator(s): PEERASAK SRINIVES, RUNGSARID KAVEETA, KARSEDIS DISTABANJONG, D. SOUMANO

Date planted: July 23, 1980
Date harvested: October 1980
Soil type: loe series, pH 5.6
Fertilizer used (kg/ha): N 208, P 273
Amount of moisture: 471.6 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
43	Alamo	2533.88	41.50	110.00	4.00	3.00	51.25	78.75	30.83	1.00
9	Jupiter	2288.37	37.50	113.00	4.00	2.75	46.25	86.25	40.58	1.00
39	IGH 23	2267.75	42.25	110.00	4.00	3.00	46.25	63.75	46.58	1.25
2	UFV-1	2023.36	36.00	110.00	4.00	3.00	57.50	72.50	28.95	1.00
3	SJ-2	1960.93	37.25	110.00	4.00	3.00	53.75	71.25	40.98	1.25
40	IGH 24	1953.47	43.75	116.00	4.00	3.00	52.50	78.75	45.45	1.00
37	G 2120	1847.45	47.75	110.00	3.75	2.50	47.50	78.75	58.80	2.50
41	UFV-1 (BP-2)	1779.61	35.25	110.00	4.00	2.50	48.75	72.50	36.73	1.00
7	ICA Tunia	1639.04	35.00	108.25	4.00	3.00	50.00	82.50	31.05	1.25
8	ICA Caribe	1604.36	39.50	113.00	3.75	3.00	57.50	71.25	55.33	1.75
19	Davis	1542.23	29.25	103.00	4.00	3.00	51.25	80.00	26.08	1.00
44	Foster	1176.69	26.75	96.00	3.75	3.00	43.75	83.75	24.65	1.00
10	Improved Pelican	1039.54	37.50	97.75	4.00	3.00	52.50	71.25	36.83	1.25
13	Bossier	809.54	27.00	97.75	3.75	3.00	55.00	81.25	21.28	1.25
14	Williams	803.58	23.75	92.50	4.25	3.00	31.25	66.25	19.98	1.75
15	Ransom	744.61	24.50	96.00	3.25	3.00	50.00	77.50	23.08	1.00
	Grand mean	1625.90	35.28	105.83	3.91	2.92	49.69	76.02	35.45	1.27
	Standard error of cultivar mean	128.55	.42		.18	.09	9.87	5.84	2.06	.18
	Coefficient of variation (%)	15.81	2.40		9.10	6.41	39.73	15.37	11.61	28.13
	5% LSD Cultivar means (*****=ns)	366.18	1.21		*****	.27	*****	*****	5.86	.51

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
43	Alamo	1.00	245.00	22.05	8.83	16.00	1.75	54.50	43.8	21.4
9	Jupiter	1.00	250.75	24.75	10.43	14.58	2.50	43.25	43.8	21.4
39	IGH 23	1.00	234.75	28.55	15.03	14.53	2.75	73.75	46.8	17.9
2	UFV-1	1.00	215.25	24.60	7.75	14.48	2.25	74.50	44.4	20.6
3	SJ-2	1.00	244.75	18.75	9.33	12.38	2.00	78.75	43.7	20.1
40	IGH 24	1.00	234.25	28.15	11.70	12.18	2.00	42.50	41.7	19.4
37	G 2120	1.00	243.50	20.55	10.68	7.88	1.25	71.25	46.1	14.9
41	UFV-1 (BP-2)	1.00	247.25	18.20	9.70	13.05	2.75	60.50	43.4	21.5
7	ICA Tunia	1.00	216.50	15.95	8.00	15.10	2.50	30.50	43.2	21.1
8	ICA Caribe	1.00	231.75	23.60	10.25	9.38	1.50	22.75	46.7	16.6
19	Davis	1.00	265.25	19.50	7.48	16.43	3.50	28.50	42.4	22.4
44	Foster	1.00	247.50	15.45	4.93	13.13	5.00	29.00	43.1	22.5
10	Improved Pelican	1.00	94.00	21.50	5.60	12.25	4.25	51.00	44.7	22.1
13	Bossier	1.00	201.75	12.30	4.15	13.38	5.00	35.75	44.4	21.5
14	Williams	1.00	238.50	8.15	6.70	16.95	4.75	47.25	43.7	22.6
15	Ransom	1.00	191.50	9.85	4.33	14.35	5.00	32.00	42.9	23.7
	Grand mean	1.00	225.14	19.49	8.43	13.50	3.05	48.48		
	Standard error of cultivar mean		10.28	2.64	.78	.36	.34	8.16		
	Coefficient of variation (%)		9.13	27.07	18.55	5.27	22.33	33.67		
	5% LSD Cultivar means (*****=ns)		29.27	7.51	2.23	1.01	.97	23.25		

Table 156. Experiment 162, 1981

Country: THAILAND
Region: ASIA
Latitude: 14° 30′ N
Longitude: 101° 30′ E
Zone: 4
Elevation: 300 m

Site: SUWAN FARM, PAKCHONG NAKHONRACHSIMA
Cooperator(s): PEERASAK SRINIVES, KARSEDIS DISTABANJONG, R. KAVEETA D. SAUMANO

Date planted: November 18, 1981
Date harvested: February 1982
Soil type: pH 5.6, OM 2.0%, loei series
Fertilizer used (kg/ha): N 208, P 273
Number of irrigations: 14 (280) mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
7	ICA Tunia	1034.30	37.75	107.50	1.00	1.25	92.50	97.50	27.85	1.25
43	Alamo	942.90	44.00	104.00	2.00	1.50	95.25	97.50	22.92	2.00
3	SJ-2	887.55	39.50	104.00	1.50	1.75	93.75	97.50	29.30	1.50
37	G 2120	881.35	47.50	111.00	1.00	1.00	97.50	98.75	40.22	1.25
46	Ecuador 2	840.75	43.00	98.00	1.25	1.25	93.75	96.25	26.22	1.25
9	Jupiter	746.75	45.25	104.00	1.50	1.25	87.75	96.25	32.32	2.25
41	UFV-1 (BP-2)	745.85	37.50	104.00	1.25	1.00	96.25	100.00	20.90	1.25
40	IGH 24	738.65	46.50	120.75	1.75	1.00	97.50	98.75	33.35	1.50
10	Improved Pelican	711.65	42.75	96.00	1.25	1.00	98.75	96.25	25.77	1.00
2	UFV-1	670.50	37.25	102.00	1.50	1.50	98.75	100.00	17.50	1.25
39	IGH 23	647.85	47.75	107.50	2.00	1.00	95.00	98.75	34.90	1.75
19	Davis	619.00	36.00	104.00	1.50	1.25	96.25	100.00	16.10	1.25
58	Williams 79	505.45	31.75	98.00	1.00	1.00	93.75	88.75	18.80	1.25
44	Foster	413.45	32.00	96.00	1.00	1.00	96.25	88.75	17.17	1.00
8	ICA Caribe	370.85	38.00	98.00	1.00	1.25	100.00	95.00	16.65	1.25
13	Bossier	282.75	32.25	100.00	1.50	1.25	98.75	97.50	13.45	1.25
	Grand mean	689.97	39.92	103.42	1.37	1.20	95.73	96.72	24.59	1.39
	Standard error of cultivar mean	101.77	1.08	1.35	.25	.27	2.85	2.13	1.17	.24
	Coefficient of variation (%)	29.50	5.42	2.61	36.57	44.81	5.95	4.41	9.48	34.86
	5% LSD Cultivar means (*****=ns)	289.88	3.08	3.85	*****	*****	*****	6.07	3.32	.69

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
7	ICA Tunia	1.00	102.50	19.40	7.85	23.02	1.25	95.50		
43	Alamo	1.00	108.00	19.60	6.22	15.57	1.25	97.00		
3	SJ-2	1.00	114.00	24.70	7.62	14.22	1.75	94.50		
37	G 2120	1.00	118.00	45.90	11.65	7.45	2.25	97.75		
46	Ecuador 2	1.00	111.25	21.20	8.27	16.60	1.50	80.75		
9	Jupiter	1.00	112.25	18.75	9.22	19.45	1.50	91.50		
41	UFV-1 (BP-2)	1.00	109.50	18.05	6.80	17.17	1.25	94.50		
40	IGH 24	1.00 (3)	107.75	25.00	10.07	19.35	2.25	70.50		
10	Improved Pelican	1.00	98.00	25.85	8.92	13.70	2.00	90.50		
2	UFV-1	1.00	106.00	15.75	6.90	17.15	1.25	88.00		
39	IGH 23	1.00	110.00	21.60	9.95	19.87	2.00	94.75		
19	Davis	1.00	92.25	13.80	5.77	20.35	2.25	95.50		
58	Williams 79	1.00	94.75	14.75	7.57	18.55	1.75	97.00		
44	Foster	1.00	110.25	14.05	6.72	17.27	2.00	82.50		
8	ICA Caribe	1.50	106.50	18.60	7.17	12.22	1.25	96.75		
13	Bossier	1.00	103.75	10.75	4.85	17.20	1.75	89.75		
	Grand mean	1.03	106.55	20.48	7.85	16.82	1.70	91.05		
	Standard error of cultivar mean	.25	7.36	2.39	.74	.40	.33	2.71		
	Coefficient of variation (%)	24.42	13.82	23.36	18.78	4.76	38.23	5.95		
	5% LSD Cultivar means (*****=ns)	*****	*****	6.82	2.10	1.14	*****	7.72		

Table 157. Experiment 165, 1981

Country: THAILAND
Region: ASIA
Latitude: 14° 47′ N
Longitude: 100° 50′ E
Zone: 4
Elevation: 95 m

Site: PHRAPUTTHABAT FIELD CROP EXP. STATION
Cooperator(s): KHORNTHONG PUANGPRAKONE, AMNUAY TONGDEE

Date planted: August 3, 1981
Date harvested: October 1981
Soil type: pH 5.5, reddish-brown, lateritic soil pakchong series
Fertilizer used (kg/ha): N 18.75, P 25.0, K 31.0 pH 5.5
Substitute cultivar: SJ-5

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
44	Foster	2477.16	25.00	78.00					37.35	1.00
19	Davis	2345.05	28.00	80.25					38.90	1.00
58	Williams 79	2308.38	21.00	78.75					66.25	2.00
7	ICA Tunia	2260.45	28.00	85.00					75.00	1.50
46	Ecuador 2	2175.43	33.00	93.50					77.20	2.00
40	IGH 24	2085.42	42.00	97.00					102.50	1.50
41	UFV-1 (BP-2)	2062.50	29.75	87.00					106.20	1.50
2	UFV-1	2058.33	32.00	86.00					61.90	2.25
43	Alamo	2027.91	39.50	90.50					65.80	1.25
13	Bossier	1865.79	25.00	78.00					34.95	1.75
3	SJ-2	1813.70	24.50	85.00					100.20	2.50
9	Jupiter	1747.85	39.75	93.50					86.65	1.75
39	IGH 23	1678.25	39.75	92.75					100.10	2.50
216	SJ-5	1624.07	32.00	81.25					81.70	2.00
37	G 2120	1622.41	46.00	85.00					108.70	2.50
8	ICA Caribe	1197.32	35.25	106.00					106.65	2.75
	Grand mean	1959.38	32.53	87.34					78.13	1.86
	Standard error of cultivar mean	85.96	1.97	.80					2.53	.60
	Coefficient of variation (%)	8.77	12.13	1.82					6.47	64.61
	5% LSD Cultivar means (*****=ns)	244.86	5.62	2.27					7.20	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
44	Foster	1.00	195.50	25.60	9.40	11.85	2.00	91.25		
19	Davis	1.00	122.25	30.72	7.85	13.82	2.00	76.75		
58	Williams 79	1.00	189.25	19.95	10.15	14.65	2.00	87.25		
7	ICA Tunia	1.00	188.25	22.65	15.75	13.70	3.00	84.25		
46	Ecuador 2	1.00	174.75	29.15	20.65	13.45	2.75	95.75		
40	IGH 24	1.00	173.50	39.95	19.25	11.57	1.75	97.75		
41	UFV-1 (BP-2)	1.00	185.25	33.05	23.75	10.50	2.75	89.75		
2	UFV-1	1.00	191.75	23.30	22.25	10.85	2.50	87.75		
43	Alamo	1.00	187.50	24.40	23.30	11.60	2.00	92.75		
13	Bossier	1.00	183.25	23.65	9.20	12.30	2.00	95.50		
3	SJ-2	1.00	177.50	42.10	14.85	9.85	2.00	81.00		
9	Jupiter	1.00	170.25	30.85	27.40	13.97	2.75	95.25		
39	IGH 23	1.00	172.25	32.95	30.85	12.68	2.50	83.25		
216	SJ-5	1.00	182.00	30.60	16.90	11.27	2.00	86.75		
37	G 2120	1.00	185.75	50.55	17.20	5.72	2.75	92.25		
8	ICA Caribe	1.00	160.50	60.05	19.05	8.67	2.75	86.75		
	Grand mean	1.00	177.47	32.47	17.99	11.65	2.34	89.00		
	Standard error of cultivar mean	0.00	5.45	2.78	1.85	.29	.15	3.52		
	Coefficient of variation (%)	0.00	6.15	17.14	20.58	4.92	12.62	7.92		
	5% LSD Cultivar means (*****=ns)	0.00	15.53	7.93	5.27	.82	.42	10.04		

Table 158. Experiment 907, 1980

Country: TURKEY
Region: MIDDLE EAST
Latitude: 37° 51′ N
Longitude: 32° 31′ E
Zone: 12
Elevation: 1028 m

Site: KONYA
Cooperator(s): YASAR BILGIN, CEVDET NALIC

Date planted: May 5, 1980
Date harvested: September 1980
Soil type: pH 8.2, OM .8%
Fertilizer used (kg/ha): P 26.2, K 25.9
Amount of moisture: 534.6 mm
Number of irrigations: 4 (70 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
57	Corsoy 79	2563.01	29.75	115.50	2.00	1.00	13.75	92.50	75.00	1.75
55	Harlon	2250.45	33.25	97.00	2.00	1.00	16.25	45.00	65.75	1.25
59	Will	2229.61	27.75	118.25	2.50	1.25	15.00	92.50	74.25	1.25
61	Cumberland	2187.94	30.25	112.00	1.75	1.00	22.50	98.75	89.25	1.25
36	Evans	2146.26	36.25	94.50	1.25	1.25	18.75	75.00	51.25	1.00
58	Williams 79	2042.07	29.50	108.50	2.25	1.00	15.00	96.25	74.75	1.50
14	Williams	1979.56	30.25	119.50	2.50	1.50	15.00	90.00	77.50	1.25
54	Chippewa 64	1917.05	30.50	106.25	3.00	1.25	15.00	75.00	64.00	1.50
56	Coles	1896.21	26.75	102.25	2.75	1.25	13.75	91.25	69.75	1.25
50	DeSoto	1771.19	26.00	123.25	2.75	1.25	13.75	97.50	89.50	1.50
21	Calland	1729.51	32.25	105.75	3.00	1.50	12.50	73.75	78.75	1.00
38	McCall	1667.00	31.50	94.00	2.25	1.50	20.00	46.25	47.50	1.00
60	Kent	972.28	31.00	105.25	2.50	1.25	11.25	93.75	80.50	1.00
32	Columbus	708.47	28.50	120.00	2.75	1.25	13.75	98.75	95.25	1.75
62	York	666.80	25.25	113.75	2.00	1.25	15.00	98.75	92.25	1.75
51	Celest	375.07	32.00	107.50	2.00	1.25	17.50	93.75	86.25	1.00
	Grand mean	1693.91	30.05	108.95	2.33	1.23	15.55	84.92	75.72	1.31
	Standard error of cultivar mean	127.57	2.67	8.53	.36	.26	1.94	10.68	4.97	.20
	Coefficient of variation (%)	15.06	17.79	15.65	30.93	42.62	25.01	25.16	13.14	30.32
	5% LSD Cultivar means (*****=ns)	363.37	*****	*****	*****	*****	5.54	30.42	14.17	.57

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
57	Corsoy 79	1.00	310.25	14.50	6.50	13.38	2.00	50.75	38.4	20.8
55	Harlon	1.00	297.00	18.00	7.25	13.80	1.00	54.25	38.6	21.6
59	Will	1.00	302.00	12.00	6.00	14.43	1.00	95.75	41.4	20.0
61	Cumberland	1.00	318.25	15.00	7.00	15.83	1.00	94.75	40.8	19.6
36	Evans	1.00	308.25	15.00	6.25	14.08	2.00	46.25	39.0	21.6
58	Williams 79	1.00	295.00	13.50	8.00	15.13	1.00	99.00	40.2	21.2
14	Williams	1.00	300.75	16.00	8.00	13.78	2.00	100.00	41.0	20.1
54	Chippewa 64	1.00	320.25	15.50	6.00	13.20	1.00	93.75	39.7	20.7
56	Coles	1.00	299.75	14.25	6.50	14.23	2.00	31.25	39.2	21.3
50	DeSoto	1.00	312.25	16.00	6.00	13.18	1.00	88.00	41.6	19.2
21	Calland	1.00	299.50	15.00	7.50	13.23	2.00	78.50	40.3	19.8
38	McCall	1.00	291.50	15.50	6.25	14.48	1.00	79.00	37.3	21.3
60	Kent	1.00	289.75	18.00	6.00	11.60	3.00	80.25	41.5	18.6
32	Columbus	1.00	293.75	13.00	6.00	10.50	3.00	93.25	41.7	18.3
62	York	1.00	326.25	16.00	8.00	11.40	2.00	56.00	40.2	15.1
51	Celest	1.00	301.50	13.50	6.00	10.40	3.00	55.25	42.2	14.8
	Grand mean	1.00	304.13	15.05	6.70	13.29	1.75	74.75		
	Standard error of cultivar mean		11.56	1.24	.25	.60		4.28		
	Coefficient of variation (%)		7.60	16.52	7.32	9.10		11.45		
	5% LSD Cultivar means (*****=ns)		*****	*****	.70	1.72		12.19		

Table 159. Experiment 908, 1980

Country: TURKEY
Region: MIDDLE EAST
Latitude: 41° 20′ N
Longitude: 37° 30′ E
Zone: 13
Elevation: 38 m
Site: SAMSUN
Cooperator(s): NECMI AKKOYUNLU, KARADENIZ BOLGE ZIRAI
Date planted:
Date harvested:

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
60	Kent	1087.72			131.75	125.75			57.50	1.00
62	York	1070.21			112.75	145.00			70.50	2.00
51	Celest	1068.96			188.50	154.00			56.50	1.00
38	McCall	1010.20			131.25	134.25			43.00	1.00
55	Harlon	923.52			122.25	146.00			53.00	1.00
36	Evans	788.91			158.00	157.00			46.00	1.00
54	Chippewa 64	752.23			174.75	120.75			53.25	1.00
57	Corsoy 79	693.89			139.50	135.00			52.50	2.00
56	Coles	683.47			137.50	118.25			46.75	1.00
21	Calland	681.39			110.25	131.50			54.50	1.00
61	Cumberland	675.13	71.50		187.00	176.00			49.25	1.00
32	Columbus	661.80			132.50	139.00			51.50	1.00
58	Williams 79	593.87			123.50	111.00			55.75	1.00
14	Williams	556.36			181.00	145.25			49.75	1.00
50	DeSoto	382.58			167.00	119.25			49.00	1.00
59	Will	335.48			167.50	151.50			45.75	1.00
	Grand mean	747.86	4.47		147.81	138.09			52.16	1.13
	Standard error of cultivar mean	108.98	10.32		16.13	20.06			2.56	
	Coefficient of variation (%)	29.15	461.88		21.83	29.05			9.83	
	5% LSD Cultivar means (*****=ns)	310.43	29.40		45.95	*****			7.30	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
60	Kent	1.00		10.00	14.00	17.10	1.00	100.00	43.0	17.9
62	York	1.00		13.13	21.75	14.70	2.00	100.00	42.6	16.5
51	Celest	1.00		11.58	26.50	16.70	2.00	100.00	42.4	16.4
38	McCall	1.00		13.80	5.75	11.80	3.00	95.00	41.6	17.5
55	Harlon	1.00		11.08	9.75	11.20	3.00	90.00	40.9	20.7
36	Evans	1.00		10.35	8.50	11.40	3.00	100.00	40.8	19.6
54	Chippewa 64	1.00		8.88	10.75	11.60	3.00	100.00	42.3	17.3
57	Corsoy 79	1.00		8.85	11.50	10.85	4.00	90.00	42.7	16.0
56	Coles	1.00		10.65	9.00	14.30	4.00	100.00	44.3	15.4
21	Calland	1.00		8.10	12.75	15.10	3.00	100.00	40.8	17.3
61	Cumberland	1.00		7.78	9.25	15.00	1.00	100.00	43.4	18.7
32	Columbus	1.00		9.70	16.25	13.20	2.00	100.00	43.2	17.8
58	Williams 79	1.00		9.00	13.50	14.33	3.00	98.75	43.3	18.7
14	Williams	1.00		5.63	12.00	12.70	3.00	100.00	43.0	18.2
50	DeSoto	1.00		5.10	12.00	13.20	3.00	96.25	43.8	17.2
59	Will	1.00		4.78	10.00	15.70	1.00	100.00	43.3	18.3
	Grand mean	1.00		9.27	12.70	13.68	2.56	98.13		
	Standard error of cultivar mean			1.27	1.26	.07		.46		
	Coefficient of variation (%)			27.29	19.77	1.03		.93		
	5% LSD Cultivar means (*****=ns)			3.60	3.58	.20		1.30		

Table 160. Experiment 217, 1981

Country: TURKEY
Region: MIDDLE EAST
Latitude: 34° N
Longitude: 35° E
Zone: 10
Elevation: 123 m

Site: ADANA
Cooperator(s): IBRAHIM ATAKISI, HALIS ARIOGLU AND M. ENGIN

Date planted: June 1, 1981
Date harvested: September 1981
Soil type: sand 34.3%, silt 40%, clay 25.7%, pH 7.5
Fertilizer used (kg/ha): N 25.0, P 25.0
Amount of moisture: 713.7 mm
Number of irrigations: 4 (460 mm)
Substitute cultivars: Improved Pelican

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
69	Essex	3235.23			1.67		100.00		84.92	1.00
21	Calland	2660.12			1.02		100.00		94.02	1.00
52	Bay	2654.28			3.10		100.00		107.15	1.00
19	Davis	2524.25			5.25		100.00		111.82	1.00
48	Gail	2436.32			3.25		100.00		99.07	1.00
35	Crawford	2295.04			1.70		100.00		102.00	1.00
68	Amsoy 71	2156.26			1.30		100.00		98.57	1.00
47	PK-73-94	1895.38			2.20		100.00		115.90	1.00
75	Braxton	1833.28			2.20		100.00		131.17	1.00
53	Ware	1817.03			2.65		100.00		72.32	1.00
50	DeSoto	1720.34			5.20		100.00		92.82	1.00
2	UFV-1	1696.59			1.02		100.00		168.15	1.00
49	Centennial	1624.91			2.20		100.00		103.35	1.00
58	Williams 79	1592.82			2.20		100.00		94.22	1.00
44	Foster	1529.47			1.75		100.00		118.40	1.00
43	Alamo	1464.04			2.17		100.00		155.45	1.00
51	Celest	1150.23			1.90		100.00		90.05	1.00
10	Improved Pelican	920.18			1.07		100.00		166.30	1.00
	Grand mean	1955.88			2.33		100.00		111.43	1.00
	Standard error of cultivar mean	180.20			.13		0.00		2.93	0.00
	Coefficient of variation (%)	18.43			11.11		0.00		5.26	0.00
	5% LSD Cultivar means (*****=ns)	511.62			.37		0.00		8.32	0.00

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
69	Essex	1.00	220.75	36.15	22.22	18.60	1.00	100.00	44.9	18.5
21	Calland	1.00	321.00	26.67	19.25	23.30	2.00	100.00	44.6	19.4
52	Bay	1.00	210.50	28.72	23.00	18.90	1.00	100.00	42.5	19.6
19	Davis	1.00	145.25	55.32	28.22	12.20	2.00	100.00	42.4	18.2
48	Gail	1.00	208.50	31.75	24.00	18.40	1.00	100.00	45.0	17.2
35	Crawford	1.00	204.00	36.75	21.27	13.70	1.00	100.00	44.1	19.8
68	Amsoy 71	1.00	265.25	40.22	15.42	18.50	3.00	100.00	43.0	19.9
47	PK-73-94	1.00	223.50	54.47	22.20	13.10	1.00	100.00	42.5	17.3
75	Braxton	1.00	221.25	24.50	32.07	15.60	2.00	100.00	41.8	19.6
53	Ware	1.00	254.75	20.57	11.95	19.80	1.00	100.00	44.3	19.0
50	DeSoto	3.00	181.25	33.22	16.97	12.70	3.00	100.00	43.3	20.2
2	UFV-1	1.00	232.75	57.55	34.02	12.60	1.00	100.00	43.5	18.3
49	Centennial	1.00	143.25	44.45	18.80	12.40	2.00	100.00	44.7	17.2
58	Williams 79	2.00	205.00	34.12	14.85	19.20	2.00	100.00	44.7	21.1
44	Foster	1.00	243.00	36.42	30.67	13.00	3.00	100.00	44.1	18.6
43	Alamo	1.00	216.75	45.45	61.42	12.10	2.00	100.00	43.9	16.5
51	Celest	1.00	212.00	22.40	37.85	13.80	1.00	100.00	45.4	17.9
10	Improved Pelican	1.00	234.75	43.07	33.97	12.10	3.00	100.00	44.5	18.1
	Grand mean	1.17	219.08	37.32	26.01	15.56	1.78	100.00		
	Standard error of cultivar mean	0.00	7.58	4.25	3.10	0.00	0.00	0.00		
	Coefficient of variation (%)	0.00	6.92	22.79	23.87	0.00	0.00	0.00		
	5% LSD Cultivar means (*****=ns)	0.00	21.52	12.08	8.81	0.00	0.00	0.00		

Table 161. Experiment 319, 1981

Country: TURKEY
Region: MIDDLE EAST
Latitude: 30° 25′ N
Longitude: 40° 47′ E
Zone: 7
Elevation: 30 m

Site: ADAPAZARI
Cooperator(s): YASAR BILGIN AND CEVDET NALCI

Date planted: April 28, 1981
Date harvested: September 1981
Soil type: OM 2.6%, P 59.8 kg/ha, K 460 kg/ha
Fertilizer used (kg/ha): N 25.0, P 25.0, K 25.0
Amount of moisture: 321.7 mm
Number of irrigations: 1 (60 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
51	Celest		101.00		3.00	2.50	30.00	37.50	110.00	4.25
69	Essex		101.00		3.00	3.00	28.75	16.25	100.00	1.25
35	Crawford	3837.50	68.00	161.00	1.00	1.50	52.50	62.50	143.75	3.00
61	Cumberland	3732.50	68.00	161.00	1.00	1.00	50.00	60.00	118.75	1.50
60	Kent	3652.50	68.00	161.00	1.00	1.00	41.25	60.00	128.75	2.00
74	Pella	3435.00	59.00	133.00	1.00	1.00	52.50	47.50	102.50	1.00
50	DeSoto	3375.00	68.00	161.00	1.00	1.25	50.00	47.50	125.00	2.25
72	Amcor	3160.00	59.00	133.00	2.00	1.25	50.00	48.75	102.50	1.25
73	Century	3120.00	59.00	133.00	1.00	1.25	47.50	43.75	92.50	1.00
58	Williams 79	3107.50	65.75	154.00	1.25	1.25	45.00	52.50	121.25	1.75
57	Corsoy 79	3015.00	57.00	133.00	1.00	1.25	50.00	38.75	91.25	1.00
59	Will	2952.50	59.00	133.00	1.00	1.00	46.25	56.25	107.50	1.00
70	Hardin	2855.00	59.00	133.00	1.25	1.25	55.00	45.00	96.25	1.00
71	Hodgson 78	2530.00	45.50	120.00	1.00	2.00	48.75	40.00	111.25	1.25
38	McCall	2302.50	38.00	120.00	1.25	2.00	58.75	37.50	85.00	1.00
36	Evans	2285.00	38.00	122.00	1.25	2.00	48.75	47.50	88.75	1.00
	Grand mean	3097.14	63.33	139.86	1.37	1.53	47.19	46.33	107.81	1.59
	Standard error of cultivar mean	168.54	2.00	1.93	.11	.17	3.44	5.10	6.01	.19
	Coefficient of variation (%)	10.88	6.32	2.76	16.26	22.70	14.56	22.01	11.14	24.41
	5% LSD Cultivar means (*****=ns)	482.11	5.70	5.53	.32	.50	9.79	14.52	17.11	.55

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
51	Celest	1.00								
69	Essex	1.00								
35	Crawford	1.00	187.75	58.75		19.15	2.00	98.75		
61	Cumberland	1.00	159.75	48.50		22.45	1.00	97.50		
60	Kent	1.00	217.25	44.25		22.05	2.00	96.75		
74	Pella	1.00	268.50	31.75		23.65	2.00	97.75		
50	DeSoto	1.00	204.00	53.75		19.65	1.00	98.25		
72	Amcor	1.00	228.50	43.00		18.77	1.00	99.25		
73	Century	1.00	222.50	39.00		19.27	1.00	98.75		
58	Williams 79	1.00	238.75	47.75		20.62	2.00	98.25		
57	Corsoy 79	1.00	238.25	45.75		16.15	2.00	99.25		
59	Will	1.00	241.50	33.00		20.57	1.00	97.50		
70	Hardin	1.00	210.00	44.50		17.60	2.00	99.25		
71	Hodgson 78	1.00	218.00	47.00		18.50	2.00	99.25		
38	McCall	1.00	249.25	34.25		14.90	2.00	98.25		
36	Evans	1.00	211.25	40.50		16.87	1.00	91.00		
	Grand mean	1.00	221.09	43.70		19.30	1.57	97.84		
	Standard error of cultivar mean	0.00	14.25	4.63		.83	0.00	.94		
	Coefficient of variation (%)	0.00	12.89	21.19		8.63	0.00	1.92		
	5% LSD Cultivar means (*****=ns)	0.00	40.77	13.24		2.38	0.00	2.69		

Table 162. Experiment 320, 1981

Country: TURKEY
Region: MIDDLE EAST
Latitude: 37° 52′ N
Longitude: 37° 30′ E
Zone: 12
Elevation: 1028 m

Site: KONYA
Cooperator(s): YASAR BILGIN, C. NALCI

Date planted: April 1, 1982
Date harvested: August 1982
Fertilizer used (kg/ha): N 26.0, P 48.4, K 99.6
Amount of moisture: 562 mm
Number of irrigations: 4 (380 mm)
Substitute cultivars: Tohum Vermedi, Calland

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
234	Tohum Vermedi		80.75	144.25	3.75	3.75	30.00 (3)	47.50	44.25	1.00
71	Hodgson 78	1604.49	72.00	132.00	4.25	3.50	60.00 (2)	53.75	41.75	1.00
72	Amcor	1604.49	78.25	137.25	4.50	3.50	30.00 (2)	56.25	44.75	1.00
60	Kent	1521.14	78.75	146.50	4.75	3.75	35.00 (1)	51.25	47.25	1.00
61	Cumberland	1500.30	81.25	147.50	4.00	3.75	25.00	52.50	42.75	1.00
36	Evans	1479.46	72.00	134.25	3.75	3.25	40.00	57.50	32.00	1.00
73	Century	1479.46	74.75	135.50	4.00	3.50	32.50 (2)	60.00	38.25	1.00
38	McCall	1354.44	73.75	147.00	4.00	3.50	32.50	53.75	36.00	1.00
59	Will	1333.60	75.00	138.00	4.50	3.75	22.50 (2)	57.50	40.50	1.00
50	DeSoto	1312.76	77.75	148.25	4.50	3.75	25.00 (1)	53.75	43.25	1.00
74	Pella	1271.09	75.50	137.25	4.00	3.00	47.50 (2)	50.00	40.25	1.00
57	Corsoy 79	1250.25	77.00	137.00	4.00	3.75	57.50 (2)	57.50	49.75	1.00
21	Calland	1208.57	83.75	147.75	4.25	3.75	30.00 (2)	52.50	52.00	1.00
58	Williams 79	1083.55	82.25	144.00	4.50	4.00	35.00 (2)	52.50	44.25	1.00
35	Crawford	1041.87	98.75	147.00	4.50	3.75	35.00 (2)	50.00	57.50	1.00
70	Hardin	937.69	76.75	134.50	4.75	4.00	30.00 (1)	45.00	39.75	1.00
	Grand mean	1332.21	78.64	141.12	4.25	3.64	35.28	53.20	43.39	1.00
	Standard error of cultivar mean	204.34	2.27	2.89	.31	.23	14.59	4.99	2.42	0.00
	Coefficient of variation (%)	30.68	5.78	4.10	14.62	12.51	41.35	18.75	11.18	0.00
	5% LSD Cultivar means (*****=ns)	*****	6.47	8.24	*****	*****	*****	*****	6.91	0.00

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
234	Tohum Vermedi	1.00		16.75						
71	Hodgson 78	1.00		23.25		15.85	5.00	60.25		
72	Amcor	1.00		14.75		13.32	4.50	71.00		
60	Kent	1.00		10.75		13.25	4.00	80.50		
61	Cumberland	1.00		14.00		15.07	4.75	70.00		
36	Evans	1.00		23.25		14.92	4.75	58.50		
73	Century	1.00		12.75		13.20	4.75	65.50		
38	McCall	1.00		22.25		15.07	4.75	69.25		
59	Will	1.00		10.50		14.82	4.50	83.25		
50	DeSoto	1.00		13.00		12.55	4.00	89.75		
74	Pella	1.00		11.50		14.45	4.50	59.25		
57	Corsoy 79	1.00		21.75		13.85	4.33 (3)	66.50		
21	Calland	1.00		12.25		15.02	4.75	66.75		
58	Williams 79	1.00		9.75		13.12	4.00	78.25		
35	Crawford	1.00		11.75		13.02	3.75	89.75		
70	Hardin	1.00		20.50		15.12	4.75	58.50		
	Grand mean	1.00		15.55		14.18	4.47	71.13		
	Standard error of cultivar mean	0.00		1.72		1.11	.60	7.39		
	Coefficient of variation (%)	0.00		22.08		15.69	13.35	20.79		
	5% LSD Cultivar means (*****=ns)	0.00		4.89		*****	*****	21.10		

Table 163. Experiment 321, 1981

Country: TURKEY
Region: MIDDLE EAST
Latitude: 41° 11′ N
Longitude: 36° 45′ E
Zone: 13
Elevation: 35 m

Site: CARSAMBA
Cooperator(s): YASAR BILGIN, CEVDET WALCI, TALAT ARKONT

Date planted: May 5, 1981
Date harvested: September 1981
Soil type: pH 5.8, OM 2.8
Fertilizer used (kg/ha): N 25.0, P 25.0, K 25.0
Amount of moisture: 537.4 mm
Number of irrigations: 2 (160 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
59	Will	4621.76	47.00	127.00		3.25			84.17	2.00
72	Amcor	4138.33	46.75	123.00		3.50			82.97	2.25
58	Williams 79	3684.07	81.50	130.50		3.75		5.00 (1)	92.37	3.25
57	Corsoy 79	3679.90	43.00	127.00		3.25			78.42	2.00
61	Cumberland	3488.20	47.75	134.50		3.00		5.00 (1)	90.95	3.00
73	Century	3367.34	43.00	127.00		4.00			77.22	2.00
74	Pella	3361.09	42.50	131.00		3.00			78.60	2.00
60	Kent	3292.32	84.50	135.25		2.75		22.50 (2)	103.00	3.00
69	Essex	3208.97	45.75	143.00		2.25		30.00 (3)	85.25	2.25
50	DeSoto	3000.60	43.00	137.00		3.25			102.50	3.50
71	Hodgson 78	2958.92	42.25	124.00		3.25			75.65	2.00
35	Crawford	2958.92	47.25	143.00		2.25		30.00 (3)	107.75	3.00
70	Hardin	2750.55	41.75	123.00		3.25			59.62	2.00
36	Evans	2508.83	34.75	114.00		4.25			50.85	1.75
51	Celest	2292.12	93.00	143.00		2.50		36.25	103.00	3.25
38	McCall	1996.23	39.50	120.00		4.75			45.47	1.75
	Grand mean	3206.76	51.45	130.14		3.27		27.14	82.36	2.44
	Standard error of cultivar mean	352.88	2.09	2.16		.33		14.77	3.24	.26
	Coefficient of variation (%)	22.01	8.13	3.32		20.39		54.41	7.87	21.73
	5% LSD Cultivar means (*****=ns)	1005.15	5.96	6.15		.95		*****	9.24	.75

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
59	Will	1.00	158.25	52.00	15.05	18.05	1.25	98.25		
72	Amcor	1.00	78.25	75.00	10.40	19.40	2.00	93.00		
58	Williams 79	1.00	106.00	64.75	13.95	18.82	1.25	95.50		
57	Corsoy 79	1.00	124.25	73.00	9.95	16.85	2.00	99.25		
61	Cumberland	1.00	63.25	79.25	11.85	20.22	1.50	98.25		
73	Century	1.00	108.50	53.00	9.70	18.80	1.25	97.75		
74	Pella	1.00	109.75	46.75	10.00	23.02	1.25	88.25		
60	Kent	1.00	100.25	66.25	14.50	19.32	2.00	99.50		
69	Essex	1.00	95.25	109.50	13.50	15.17	1.25	100.00		
50	DeSoto	1.00	89.50	81.75	12.25	19.20	1.50	100.00		
71	Hodgson 78	1.00	100.00	67.50	8.75	19.22	1.75	98.75		
35	Crawford	1.00	85.75	81.25	13.75	18.07	1.50	99.25		
70	Hardin	1.00	109.25	50.00	7.75	16.75	1.75	99.25		
36	Evans	1.00	110.00	43.25	7.55	17.40	2.00	94.25		
51	Celest	1.00	100.75	75.50	15.00	20.10	1.00	98.75		
38	McCall	1.00	130.25	35.00	6.65	15.75	2.00	94.75		
	Grand mean	1.00	104.33	65.86	11.29	18.51	1.58	97.17		
	Standard error of cultivar mean	0.00	15.90	9.27	.99	.41	.21	1.94		
	Coefficient of variation (%)	0.00	30.48	28.14	17.47	4.44	27.05	3.98		
	5% LSD Cultivar means (*****=ns)	0.00	*****	26.39	2.81	1.17	.61	5.51		

Table 164. Experiment 322, 1981

Country: TURKEY
Region: MIDDLE EAST
Latitude: 37° 52′ N
Longitude: 32° 30′ E
Zone: 11
Elevation: 1028 m

Site: KONYA
Cooperator(s): YASAR BILGIN AND TALAT ARKONT

Date planted: April 26, 1981
Date harvested: August 1981
Soil type: pH 8.0, OM 1.6%, P 32 kg/ha, K 375 kg/ha
Fertilizer used: (kg/ha): N 25.0, P 25.0, K 25.0
Amount of moisture: 318.4 mm
Number of irrigations: 2 (240 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
51	Celest		112.00	203.00	2.50	2.25	50.00		67.70	1.25
69	Essex		111.50	203.00	2.50	2.50	37.50		63.77	1.00
72	Amcor	2187.94	58.00	125.00	2.50	2.75	42.50		70.20	1.00
57	Corsoy 79	1979.56	59.75	125.25	2.50	2.75	42.50		61.07	1.00
71	Hodgson 78	1646.16	41.25	111.75	2.25	2.25	50.00		50.77	1.00
73	Century	1604.49	59.50	125.25	2.50	2.00	51.25		54.22	1.25
59	Will	1583.65	58.00	125.00	2.50	2.50	53.75		58.00	1.00
36	Evans	1458.62	40.75	124.25	2.50	2.75	40.00		44.22	1.00
60	Kent	1437.79	70.00	166.00	2.50	2.50	43.75		60.90	1.25
70	Hardin	1396.11	56.50	134.00	2.75	2.50	41.25		48.72	1.00
61	Cumberland	1354.44	69.00	166.00	2.50	2.75	41.25		61.75	1.25
74	Pella	1291.92	55.00	134.00	3.00	3.00	50.00 (3)		58.17	1.00
50	DeSoto	1271.09	68.75	166.00	2.00	2.00	50.00		63.42	1.00
35	Crawford	1208.57	68.25	166.00	2.25	2.25	45.00		66.45	1.00
58	Williams 79	1125.22	59.00	157.25	2.50	2.50	42.50		59.42	1.25
38	McCall	958.52	40.75	111.75	2.75	2.50	40.00		45.92	1.00
	Grand mean	1464.58	64.25	146.47	2.50	2.48	45.00		58.42	1.08
	Standard error of cultivar mean	178.07	1.09	4.90	.41	.30	11.61		3.63	.14
	Coefficient of variation (%)	24.32	3.38	6.69	32.52	23.78	25.79		12.41	25.22
	5% LSD Cultivar means (*****=ns)	509.37	3.09	13.95	*****	*****	*****		10.33	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
51	Celest	1.00 (2)		12.80 (1)						
69	Essex	1.00		13.50						
72	Amcor	1.00		17.82		14.80	3.25	66.50	40.2	19.1
57	Corsoy 79	1.00		17.17		12.95	3.25	49.25	41.0	20.3
71	Hodgson 78	1.00		18.15		14.60	3.25	83.25	41.3	21.4
73	Century	1.00		13.35		14.12	3.25	68.00	42.1	19.3
59	Will	1.00		16.82		13.42	2.50	90.75	41.9	19.2
36	Evans	1.00		17.72		14.02	3.00	70.25	36.6	21.6
60	Kent	1.00		16.50		12.10	4.00	62.75	42.2	19.0
70	Hardin	1.00		21.60		13.05	3.75	73.25	39.5	22.4
61	Cumberland	1.00		20.92		12.55	2.75	83.00	40.9	19.1
74	Pella	1.00		13.32		13.65	2.50	72.50	39.3	20.1
50	DeSoto	1.00		21.77		10.12	3.50	81.75	40.9	17.2
35	Crawford	1.00		17.77		12.30	3.75	65.75	42.1	18.4
58	Williams 79	1.00		16.90		11.80	3.00	91.00	42.6	18.3
38	McCall	1.00		20.47		11.35	3.50	78.50	37.9	19.8
	Grand mean	1.00		17.51		12.92	3.23	74.04		
	Standard error of cultivar mean	0.00		4.99		.47	.31	4.98		
	Coefficient of variation (%)	0.00		28.52		7.29	19.22	13.44		
	5% LSD Cultivar means (*****=ns)	0.00		*****		1.35	.89	14.23		

Table 165. Experiment 823, 1980

Country: UNITED STATES
Region: NORTH AMERICA
Latitude: 26° N
Longitude: 97° W
Zone: 7
Elevation: 30 m
Site: WESLACO, TEXAS
Cooperator(s): R. A. CREELMAN
Date planted: August 22, 1980
Date harvested: December 1980
Amount of moisture: 691 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
43	Alamo	2808.00	42.75	89.00					51.50	1.00
2	UFV-1	2717.85	38.25	89.00					38.50	1.00
13	Bossier	2329.91	24.75	84.50					29.00	1.00
18	Forrest	2299.59	26.50	85.25					34.50	1.00
47	PK-73-94	2186.23	29.50	89.00					43.50	1.00
52	Bay	2146.35	24.75	71.75					25.00	1.00
51	Celest	2136.14	29.25	89.00					35.50	1.00
19	Davis	2121.78	28.25	89.00					29.25	1.00
49	Centennial	2071.92	25.75	71.75					29.00	1.00
14	Williams	2042.64	26.25	71.00					44.75	1.00
48	Gail	2029.48	24.75	71.75					27.25	1.00
37	G 2120	2003.71	53.00	104.50					89.75	1.00
44	Foster	1838.18	26.00	73.25					24.00	1.00
50	DeSoto	1829.88	27.25	71.75					39.50	1.00
53	Ware	1516.84	24.75	71.75					21.50	1.00
10	Improved Pelican	1384.65	38.25	89.00					60.25	1.00
	Grand mean	2091.45	30.63	81.95					38.92	1.00
	Standard error of cultivar mean	128.87	1.19	2.40					2.06	
	Coefficient of variation (%)	12.32	7.76	5.86					10.58	
	5% LSD Cultivar means (*****=ns)	367.06	3.38	6.84					5.87	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
43	Alamo	1.00	147.50	24.00	13.25	13.83	1.25	90.75	43.2	17.9
2	UFV-1	1.00	125.75	32.50	8.50	13.33	2.25	84.25	43.3	18.3
13	Bossier	1.00	128.50	20.00	6.25	16.55	1.50	91.75	42.4	19.4
18	Forrest	1.00	154.25	18.50	9.25	13.68	2.00	87.00	41.6	19.6
47	PK-73-94	1.00	136.75	24.50	10.75	13.65	2.50	80.00	41.9	17.4
52	Bay	1.00	131.50	13.00	7.75	19.30	2.25	85.00	41.6	19.5
51	Celest	1.00	117.75	15.50	8.00	20.35	1.75	88.25	42.3	18.1
19	Davis	1.00	130.00	19.00	6.50	14.98	2.25	86.25	42.4	19.6
49	Centennial	1.00	150.50	18.50	7.50	15.95	2.00	85.50	43.8	19.2
14	Williams	1.00	116.25	19.75	6.50	18.55	2.25	80.00	43.6	19.0
48	Gail	1.00	113.50	20.50	6.25	19.43	2.75	77.00	45.6	16.8
37	G 2120	1.00	123.75	106.75	16.50	6.13	1.00	95.25	45.9	12.7
44	Foster	1.00	129.25	19.75	5.25	14.53	2.25	83.00	42.0	19.6
50	DeSoto	1.00	132.25	13.00	6.50	18.68	2.50	86.00	42.2	19.3
53	Ware	1.00	113.00	10.75	7.00	20.38	2.50	80.00	41.8	18.3
10	Improved Pelican	1.00	73.25	50.00	8.50	12.00	1.75	88.75	43.2	17.3
	Grand mean	1.00	126.48	26.63	8.39	15.70	2.05	85.55		
	Standard error of cultivar mean		8.44	3.08	.94	.38	.40	4.88		
	Coefficient of variation (%)		13.34	23.16	22.44	4.78	39.10	11.41		
	5% LSD Cultivar means (*****=ns)		24.03	8.78	2.68	1.07	*****	*****		

Table 166. Experiment 824, 1980

Country: UNITED STATES
Region: NORTH AMERICA
Latitude: 26° N
Longitude: 97° W
Zone: 7
Elevation: 30 m
Site: WESLACO TEXAS
Cooperator(s): R. A. CREELMAN
Date planted: August 22, 1980
Date harvested: December 1980
Soil type: pH 7.8
Amount of moisture: 691 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
2	UFV-1	2453.80	33.50	87.50					38.00	1.00
43	Alamo	2240.64	46.00	86.00					48.75	1.00
47	PK-73-94	1941.48	29.00	85.25					38.75	1.00
14	Williams	1889.71	26.00	72.50					38.25	1.00
49	Centennial	1851.02	25.25	72.50					28.75	1.00
18	Forrest	1845.51	29.00	82.25					31.00	1.00
13	Bossier	1804.35	24.50	77.75					24.25	1.00
51	Celest	1782.57	29.00	85.25					34.75	1.00
19	Davis	1723.38	29.00	81.50					27.25	1.00
52	Bay	1705.19	24.50	72.50					21.00	1.00
50	DeSoto	1665.86	25.50	72.50					34.00	1.00
44	Foster	1646.40	25.00	73.25					19.50	1.00
10	Improved Pelican	1535.19	38.25	85.25					56.75	1.00
48	Gail	1497.06	24.50	73.25					23.25	1.00
37	G 2120	1444.81	54.75	104.50					84.50	1.00
53	Ware	1372.21	24.50	74.00					17.25	1.00
	Grand mean	1774.95	30.52	80.36					35.38	1.00
	Standard error of cultivar mean	114.38	1.20	2.92					2.92	
	Coefficient of variation (%)	12.89	7.85	7.26					16.49	
	5% LSD Cultivar means (*****=ns)	325.82	3.41	8.30					8.31	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
2	UFV-1	1.00	118.50	31.25	8.75	13.48	1.25	94.25	43.0	18.5
43	Alamo	1.00	129.25	26.50	13.50	13.43	1.25	95.50	43.0	17.3
47	PK-73-94	1.00	129.50	25.50	9.00	13.88	1.75	96.00	42.6	18.6
14	Williams	1.00	112.50	18.75	6.25	17.95	1.75	94.50	43.6	19.2
49	Centennial	1.00	148.00	19.00	5.75	15.78	2.25	87.50	44.3	17.9
18	Forrest	1.00	140.50	21.00	6.50	13.53	1.00	96.00	41.0	19.6
13	Bossier	1.00	108.25	20.50	4.25	15.70	1.25	96.50	43.5	19.7
51	Celest	1.00	115.00	14.50	9.50	19.23	2.75	81.75	42.5	19.1
19	Davis	1.00	105.25	26.00	5.50	14.73	1.25	94.00	42.3	18.8
52	Bay	1.00	149.75	14.25	6.00	18.45	1.50	88.50	41.4	20.0
50	DeSoto	1.00	121.25	14.00	7.25	17.58	2.25	88.25	42.8	18.5
44	Foster	1.00	130.75	24.00	5.50	14.28	1.50	91.50	42.1	19.5
10	Improved Pelican	1.00	61.00	47.75	7.50	12.33	1.00	98.25	43.1	19.9
48	Gail	1.00	103.25	20.00	5.75	18.20	2.75	68.00	45.2	17.7
37	G 2120	1.00	125.50	64.75	13.75	5.55	1.00	94.75	46.3	12.9
53	Ware	1.00	119.00	14.50	4.75	20.15	1.50	94.50	42.3	18.1
	Grand mean	1.00	119.83	25.14	7.47	15.26	1.63	91.23		
	Standard error of cultivar mean		9.09	3.59	.75	.50	.40	6.00		
	Coefficient of variation (%)		15.17	28.53	20.10	6.55	49.29	13.16		
	5% LSD Cultivar means (*****=ns)		25.89	10.21	2.14	1.42	1.14	*****		

Table 167. Experiment 230, 1981

Country: UNITED STATES
Region: NORTH AMERICA
Latitude: 26° N
Longitude: 97° W
Zone: 7
Elevation: 30 m
Site: WESLACO, TEXAS
Cooperator(s): RICHARD CREELMAN
Date planted: August 7, 1981
Date harvested: November 1981
Amount of moisture: 276.06 mm
Number of irrigations: 3

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
43	Alamo	3524.88	42.00						46.95	1.75
2	UFV-1	3034.45	38.00						42.80	1.25
47	PK-73-94	2774.06	33.00						32.22	1.00
10	Improved Pelican	2487.31	38.00						72.42	1.50
51	Celest	2349.12	31.50						50.65	1.00
19	Davis	2210.14	30.75						24.47	1.00
75	Braxton	2151.03	30.75						28.70	1.00
50	DeSoto	1809.97	33.00						37.72	1.00
44	Foster	1729.29	30.00						25.60	1.00
69	Essex	1635.84	31.50						21.00	1.00
49	Centennial	1459.32	32.25						21.42	1.00
58	Williams 79	1436.95	32.25						36.50	1.50
35	Crawford	1375.45	32.50						36.67	1.25
52	Bay	1297.97	30.00						19.87	1.00
48	Gail	1183.75	30.75						19.52	1.00
53	Ware	814.72	25.00						19.40	1.00
	Grand mean	1954.64	32.58						33.50	1.14
	Standard error of cultivar mean	214.16	.51						4.19	.15
	Coefficient of variation (%)	21.91	3.16						25.03	25.57
	5% LSD Cultivar means (*****=ns)	610.02	1.46						11.94	.42

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
43	Alamo	1.00	101.25	56.25	14.55	13.57	1.50	92.25	43.6	18.5
2	UFV-1	1.00	136.75	47.00	13.52	13.52	1.50	88.50	43.1	17.9
47	PK-73-94	1.75	146.75	52.50	5.42	13.02	2.00	87.00	41.4	19.0
10	Improved Pelican	1.00	118.25	48.00	13.32	12.40	1.00	95.50	43.4	18.5
51	Celest	1.00	92.00	33.25	6.87	19.37	1.50	92.75	42.5	19.2
19	Davis	2.00	77.75	43.50	3.70	16.62	2.25	87.25	42.8	18.5
75	Braxton	1.25	116.50	24.75	5.40	18.22	2.25	83.75	42.4	19.9
50	DeSoto	2.75	92.75	37.25	5.50	18.17	3.25	72.00	42.7	19.9
44	Foster	1.75	131.25	32.75	3.87	14.92	1.25	95.25	44.3	18.2
69	Essex	2.25	123.25	28.75	4.60	13.70	2.00	82.25	43.7	19.1
49	Centennial	2.00	84.75	38.50	3.97	15.90	2.00	83.75	45.5	18.7
58	Williams 79	1.50	96.50	28.25	4.47	15.12	2.00	84.25	43.7	20.1
35	Crawford	1.50	80.25	35.50	4.22	16.42	1.75	88.50	43.3	19.7
52	Bay	2.50	115.25	23.00	4.60	17.92	2.50	79.50	43.6	20.3
48	Gail	2.00	96.50	28.25	5.95	17.32	2.75	78.00	45.6	17.1
53	Ware	2.00	105.75	22.25	4.75	20.40	3.00	79.25	45.0	18.0
	Grand mean	1.70	107.22	36.23	6.55	16.04	2.03	85.61		
	Standard error of cultivar mean	.23	11.01	4.98	.83	.54	.57	7.15		
	Coefficient of variation (%)	27.44	20.54	27.49	25.34	6.76	55.74	16.70		
	5% LSD Cultivar means (*****=ns)	.67	31.37	14.19	2.36	1.54	*****	*****		

Table 168. Experiment 345, 1981

Country: UNITED STATES
Region: NORTH AMERICA
Latitude: 40° 7′ N
Longitude: 88° 13′ W
Zone: 10
Elevation: 226 m

Site: AGRONOMY SOUTH FARM, URBANA
Cooperator(s): INTSOY

Date planted: June 5, 1981
Date harvested: October 1981
Soil type: sand 5.8%, silt 69%, clay 25.2%, pH 6.6, OM 5%, flanigan silt loam
Amount of moisture: 602 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
72	Amcor	2733.42	35.75	109.50					107.25	2.75
70	Hardin	2700.61	33.75	105.25					93.00	2.00
57	Corsoy 79	2597.50	33.75	106.25					102.25	2.50
61	Cumberland	2592.29	41.00	108.25					90.00	2.25
58	Williams 79	2561.05	41.00	115.50					108.00	2.00
59	Will	2468.35	39.00	112.50					82.75	2.00
73	Century	2367.85	34.75	109.25					85.37	1.75
74	Pella	2252.24	36.00	111.50					99.50	1.50
50	DeSoto	2190.80	42.50	118.00					97.75	2.00
55	Harlon	2141.84	33.50	104.75					94.25	2.00
36	Evans	2108.00	33.00	94.50					73.00	2.50
38	McCall	1991.35	35.00	90.00					60.25	2.25
60	Kent	1953.33	43.50	126.50					106.25	1.50
69	Essex	1723.16	60.50	135.25					87.50	1.00
35	Crawford	1705.46	64.25	126.50					100.50	2.25
51	Celest	1515.90	72.00	142.25					105.25	2.50
	Grand mean	2225.20	42.45	113.48					93.30	2.05
	Standard error of cultivar mean	202.14	1.33	2.39					3.68	.34
	Coefficient of variation (%)	18.17	6.25	4.22					7.88	32.73
	5% LSD Cultivar means (*****=ns)	575.77	3.78	6.82					10.48	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
72	Amcor	1.50	69.75	65.25	13.25	16.25	1.75	89.50		
70	Hardin	1.25	82.25	58.75	11.75	13.85	1.50	90.00		
57	Corsoy 79	1.50	83.75	55.25	14.00	14.50	1.25	93.25		
61	Cumberland	1.00	81.00	55.50	12.25	17.90	1.00	92.00		
58	Williams 79	1.25	88.25	43.75	15.75	18.00	1.00	90.25		
59	Will	1.75	76.50	59.75	14.25	16.55	1.50	93.00		
73	Century	1.25	86.25	47.00	14.00	16.15	2.25	78.50		
74	Pella	1.00	75.75	45.75	16.75	18.85	1.75	91.25		
50	DeSoto	1.25	77.00	68.25	13.50	15.65	1.50	90.00		
55	Harlon	1.00	88.75	48.25	13.25	15.50	2.50	73.50		
36	Evans	1.25	86.00	53.25	8.35	13.60	2.00	65.00		
38	McCall	1.00	84.00	40.00	7.75	15.55	2.50	58.50		
60	Kent	1.50	81.00	58.00	16.75	15.45	1.00	87.00		
69	Essex	1.00 (1)	85.50	65.00	21.67 (3)	11.25	1.25	85.00		
35	Crawford	1.00 (3)	63.00	57.50	16.50	14.10	1.00	90.00		
51	Celest	1.00 (1)	72.00	85.25	22.25	13.70	1.75	74.00		
	Grand mean	1.25	80.05	56.66	14.39	15.43	1.59	83.80		
	Standard error of cultivar mean	.51	5.85	5.66	4.71	.70	.27	4.77		
	Coefficient of variation (%)	40.94	14.61	19.99	32.74	9.13	33.64	11.39		
	5% LSD Cultivar means (*****=ns)	*****	*****	16.13	*****	2.01	.76	13.59		

Table 169. Experiment 719, 1980

Country: UPPER VOLTA
Region: AFRICA
Latitude: 11° 4′ N
Longitude: 4° 2′ W
Zone: 4
Elevation: 300 m

Site: C.E.R.C.I. EXPERIMENTAL BASE, KOU VALLEY
Cooperator(s): MICHEL HORN, E. VANOUNOU

Date planted: June 11, 1980
Date harvested: September 1980
Fertilizer used (kg/ha): N 28, P 20.3, K 24.9
Amount of moisture: 794.4 mm
Number of irrigations: 4 (240 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
9	Jupiter	1458.45	39.00						76.25	
39	IGH 23	1408.10	54.00						86.25	
45	ICA L-109	1027.86	44.00						91.00	
41	UFV-1 (BP-2)	935.14	37.00						108.25	
2	UFV-1	927.16	39.50						56.00	
44	Foster	909.79	34.00						24.50	
8	ICA Caribe	769.16	48.00						100.25	
19	Davis	713.60	34.50						53.75	
43	Alamo	689.29	43.50						61.25	
37	G 2120	625.05	53.50						98.00	
7	ICA Tunia	579.91	35.50						88.25	
3	SJ-2	507.68	40.00						81.00	
10	Improved Pelican	468.79	41.00						93.75	
14	Williams	397.60	32.75						62.50	
	Grand mean	815.54	41.16						77.21	
	Standard error of cultivar mean	125.72	.95						3.02	
	Coefficient of variation (%)	30.83	4.60						7.82	
	5% LSD Cultivar means (*****=ns)	359.63	2.71						8.63	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
9	Jupiter		201.25			18.25				
39	IGH 23		145.75			17.28				
45	ICA L-109		173.75			13.38				
41	UFV-1 (BP-2)		222.00			16.68				
2	UFV-1		199.75			15.73				
44	Foster		227.75			18.13				
8	ICA Caribe		146.25			12.78				
19	Davis		285.25			20.48				
43	Alamo		247.50			17.63				
37	G 2120		189.75			15.95				
7	ICA Tunia		205.75			18.98				
3	SJ-2		103.50			13.53				
10	Improved Pelican		111.75			15.80				
14	Williams		222.75			13.43				
	Grand mean		191.63			16.28				
	Standard error of cultivar mean		16.63			.15				
	Coefficient of variation (%)		17.36			1.87				
	5% LSD Cultivar means (*****=ns)		47.57			.44				

Table 170. Experiment 147, 1981

Country: UPPER VOLTA
Region: AFRICA
Latitude: 11° 4′ N
Longitude: 4° 2′ W
Zone: 4
Elevation: 300 m

Site: VALLEE DU KOU
Cooperator(s): MICHEL HORN, VANOUNOU ELAIS

Date planted: June 25, 1981
Date harvested: October 1981
Soil type: ferralsols
Fertilizer used (kg/ha): N 28.0, P 20.0, K 23.0
Amount of moisture: 641.3 mm
Number of irrigations: 1 (60 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
7	ICA Tunia	2700.54	36.00	106.00					64.00	
43	Alamo	2597.60	47.00	106.00					67.00	
2	UFV-1	2583.43	40.00	111.00					63.75	
19	Davis	2519.67	35.00	106.00					30.75	
13	Bossier	2501.75	30.00	100.00					48.75	
44	Foster	2469.24	30.00	100.00					52.25	
40	IGH 24	2368.39	53.00	120.00					85.75	
41	UFV-1 (BP-2)	2343.80	38.00	106.00					103.25	
9	Jupiter	2313.80	50.00	111.00					80.25	
58	Williams 79	2222.94	30.00	100.00					59.25	
3	SJ-2	2106.25	40.00	100.00					89.25	
10	Improved Pelican	2009.99	42.50	100.00					88.75	
46	Ecuador 2	2002.90	44.00	111.00					68.75	
39	IGH 23	1880.38	47.00	111.00					93.00	
37	G 2120	1860.79	50.00	100.00					93.75	
8	ICA Caribe	808.49	47.00	145.00					104.00	
	Grand mean	2205.62	41.22	108.31					74.53	
	Standard error of cultivar mean	206.26	.58	0.00					3.40	
	Coefficient of variation (%)	18.70	2.83	0.00					9.12	
	5% LSD Cultivar means (*****=ns)	587.51	1.66	0.00					9.68	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
7	ICA Tunia		250.75	27.50		19.82		86.75		
43	Alamo		251.25	42.75		15.45		63.25		
2	UFV-1		252.00	36.50		16.35		50.50		
19	Davis		122.50	41.00		21.82		59.25		
13	Bossier		257.00	24.50		18.97		75.25		
44	Foster		249.75	22.25		18.45		72.50		
40	IGH 24		213.50	45.00		32.22		73.50		
41	UFV-1 (BP-2)		255.25	44.50		14.72		73.50		
9	Jupiter		200.75	43.25		17.30		39.50		
58	Williams 79		219.00	20.75		22.12		58.00		
3	SJ-2		234.00	48.00		13.75		91.50		
10	Improved Pelican		269.75	32.75		12.32		93.25		
46	Ecuador 2		246.25	38.50		16.37		34.75		
39	IGH 23		197.25	59.50		18.65		20.75		
37	G 2120		294.00	68.00		7.00		94.00		
8	ICA Caribe		126.00	63.75		11.55		20.50		
	Grand mean		227.44	41.16		17.31		62.92		
	Standard error of cultivar mean		14.07	5.88		3.88		8.20		
	Coefficient of variation (%)		12.37	28.59		44.78		26.07		
	5% LSD Cultivar means (*****=ns)	*****	40.07	16.76		11.04		23.37		

Table 171. Experiment 155, 1981

Country: UPPER VOLTA
Region: AFRICA
Latitude: 12° 16′ N
Longitude: 2° 9′ W
Zone: 4
Elevation: 00 m

Site: SARIA
Cooperator(s): S. ASIMI

Date planted: July 8, 1981
Date harvested: September 1981
Fertilizer used (kg/ha): N 28.0, P 46.0, K 30.0
Amount of moisture: 486.3 mm
Substitute cultivar: Ilini (G38)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
9	Jupiter	2210.03	40.00	89.00	3.00	1.25	95.00	35.00	70.95	1.00
58	Williams 79	1992.90	21.00	77.00	1.75	1.75	93.75	21.25	40.32	1.00
44	Foster	1958.72	21.00	83.50	3.00	1.75	83.75	35.00	28.30	1.00
41	UFV-1 (BP-2)	1890.79	29.50	85.00	3.00	1.75	93.75	33.75	94.65	1.00
46	Ecuador 2	1593.24	32.00	87.25	2.50	2.25	66.25	46.25	57.37	1.00
19	Davis	1546.56	28.00	84.75	4.00	4.50	90.00	55.00	31.05	1.00
2	UFV-1	1540.72	32.00	85.00	3.00	2.00	95.00	42.50	41.20	1.00
13	Bossier	1525.72	21.00	80.00	3.50	2.75	72.50	47.50	31.37	1.00
10	Improved Pelican	1513.22	32.00	81.00	3.50	2.25	97.50	30.00	69.40	1.75
7	ICA Tunia	1497.38	29.50	82.50	3.50	4.00	90.00	41.25	51.65	1.00
202	Ilini (G38)	1226.08	35.00	81.00	3.00	1.50	42.50	41.25	73.65	2.25
37	G 2120	1155.23	45.75	84.00	3.50	3.00	73.75	33.75	86.82	2.00
43	Alamo	916.02	40.00	82.00	3.50	2.00	68.75	51.25	43.15	1.00
39	IGH 23	911.43	43.00	94.00	3.50	4.00	88.75	33.75	71.55	1.50
40	IGH 24	738.06	43.00	93.25	4.00	2.00	78.75	62.50	71.10	1.25
8	ICA Caribe	251.30	40.00	100.00	3.00	2.00	81.25	58.75	121.60	1.50
	Grand mean	1404.21	33.30	85.58	3.20	2.42	81.95	41.80	61.51	1.27
	Standard error of cultivar mean	223.94	.33	1.12	.40	.64	10.52	10.11	7.85	.23
	Coefficient of variation (%)	31.90	1.97	2.61	25.10	52.57	25.68	48.39	25.51	36.21
	5% LSD Cultivar means (*****=ns)	637.88	.94	3.19	1.14	1.81	29.98	*****	22.35	.65

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
9	Jupiter	1.25	207.00		11.07	12.27	1.75	32.75	45.0	18.8
58	Williams 79	1.00	195.75		6.57	18.65	2.00	43.50	46.5	20.6
44	Foster	1.00	208.25		4.62	16.82	2.00	60.50	46.1	19.7
41	UFV-1 (BP-2)	1.00	206.00		10.12	14.82	1.75	29.25	46.6	20.2
46	Ecuador 2	1.00	211.00		11.77	13.87	7.00	40.00	47.6	19.2
19	Davis	1.25	171.00		6.25	17.47	1.75	41.00	46.8	19.6
2	UFV-1	1.25	197.00		6.45	12.62	2.25	55.75	47.4	17.3
13	Bossier	1.00	201.00		3.95	17.32	1.75	51.50	47.8	19.1
10	Improved Pelican	1.00	204.50		8.87	14.20	1.50	69.25	46.8	21.0
7	ICA Tunia	1.00	213.50		10.00	16.72	1.50	61.00	46.5	19.5
202	Ilini (G38)	1.00	171.25		9.07	9.32	1.75	74.75	45.1	18.1
37	G 2120	1.25	206.50		9.37	8.87 (3)	2.25	76.25	47.6	14.3
43	Alamo	1.00	207.75		14.37	8.75	2.50	70.50	46.4	16.8
39	IGH 23	1.00	202.25		12.05	11.10	3.00	56.75	45.5	15.9
40	IGH 24	1.00	194.25		12.62	9.52	3.75	18.75	42.8	14.6
8	ICA Caribe	1.00	179.75		12.62	5.42	5.00	28.25	44.4	12.8
	Grand mean	1.06	198.55		9.36	13.05	2.59	50.61		
	Standard error of cultivar mean	.12	8.36		1.76	4.24	1.24	7.98		
	Coefficient of variation (%)	22.73	8.42		37.65	32.47	95.47	31.53		
	5% LSD Cultivar means (*****=ns)	*****	23.82		5.02	*****	*****	22.72		

Table 172. Experiment 233, 1981

Country: URUGUAY
Region: SOUTH AMERICA
Latitude: 33° S
Longitude: 52° W
Zone: 10
Elevation: 30 m

Site: TREINTA Y TRES, URUGUAY
Cooperator(s): N. CHEBATAROFF, E. DEAMBROSI

Date planted: December 11, 1981
Date harvested: May 5, 1982
Soil type: pH 5.5, solod franco limoso
Fertilizer used (kg/ha): N 30.0, P 34.0
Amount of moisture: 60 mm
Number of irrigations: 2 (60 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
48	Gail				4.00 (1)		65.00 (1)		72.60 (1)	1.00 (2)
53	Ware				1.00 (1)					
50	DeSoto	3112.52	44.75	111.25	3.67 (3)		46.67 (3)		61.02	1.00
35	Crawford	3067.22	43.00	111.00	4.00 (2)		72.50 (2)		67.80	1.00
52	Bay	2919.32	52.75	118.00	3.50 (2)		67.50 (2)		82.65	1.00
51	Celest	2707.38	55.25	121.75	3.00 (2)		40.00 (2)		60.80	1.00
75	Braxton	2646.97	58.25	91.50	3.67 (3)		76.67 (3)		82.87	1.00
69	Essex	2632.91	50.00	116.50	2.50 (2)		67.50 (2)		63.15	1.25
49	Centennial	2610.00	55.00	120.50	3.00 (3)		55.00 (3)		71.47	1.25
44	Foster	2565.74	61.50	128.25	3.50 (2)		65.00 (2)		84.72	1.75
25	Bragg	2455.86	56.75	121.75	4.00 (3)		75.00 (3)		78.30	1.75
19	Davis	2403.78	66.50	124.50	4.00 (2)		80.00 (2)		77.97	1.25
47	PK-73-94	2177.78	68.00	115.25	3.50 (2)		70.00 (2)		76.82	1.75
2	UFV-1	1658.59	75.00	143.75	4.00		68.75		84.45	2.00
10	Improved Pelican	1393.01	75.50	143.00	4.00 (2)		82.50 (2)		91.37	1.50
43	Alamo	1130.55	78.50	140.00	4.00 (3)		65.00 (3)		62.05	1.75
	Grand mean	2391.54	60.05	121.93	3.57		66.25		74.64	1.36
	Standard error of cultivar mean	151.01	1.42	9.07	.73		21.66		13.02	.52
	Coefficient of variation (%)	12.63	4.75	14.88	20.41		32.69		17.44	38.16
	5% LSD Cultivar means (*****=ns)	431.98	4.08	25.95	*****		*****		*****	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
48	Gail	1.00 (1)		51.00 (1)	19.60 (1)	21.23 (3)	2.67 (3)	94.50 (2)		
53	Ware					24.30 (1)				
50	DeSoto	1.00	146.50	33.75	10.72	23.50	2.25	92.25		
35	Crawford	1.00	167.75	30.00	13.77	21.80	2.25	96.00		
52	Bay	1.00	153.50	40.50	17.05	19.70	2.50	96.00		
51	Celest	1.00	165.75	27.25	17.20	21.12	3.00	97.25		
75	Braxton	1.00	217.25	33.75	17.42	20.22	3.00	95.25		
69	Essex	1.00	173.75	39.00	20.20	16.12	2.50	97.75		
49	Centennial	1.00	107.00	59.75	18.40	15.97	2.75	94.50		
44	Foster	1.00	200.75	44.00	23.77	14.22	2.00	88.75		
25	Bragg	1.00	74.00	49.50	18.20	18.77	2.25	97.50		
19	Davis	1.00	157.00	41.00	16.50	17.40	3.00	92.00		
47	PK-73-94	1.00	173.50	44.00	20.30	13.45	2.75	96.50		
2	UFV-1	1.00	193.75	46.75	21.40	14.92	4.25	84.00		
10	Improved Pelican	1.00	170.67 (3)	35.25	18.52	15.22	4.25	90.00		
43	Alamo	1.00	172.50	35.75	19.37	14.70	4.00	70.00		
	Grand mean	1.00	162.25	40.21	18.09	17.94	2.90	92.07		
	Standard error of cultivar mean	0.00	40.27	10.03	5.08	3.29	.82	9.18		
	Coefficient of variation (%)	0.00	24.82	24.93	28.08	18.36	28.43	9.97		
	5% LSD Cultivar means (*****=ns)	0.00	*****	*****	*****	*****	*****	*****		

Table 173. Experiment 1, 1981

Country: VIETNAM
Region: ASIA
Latitude: 21° 1′ N
Longitude: 105° 48′ E
Zone: 7
Elevation: 5.17 m

Site: THANHTRI, HANOI
Cooperator(s): NGO QUANG THANG

Date planted: March 20, 1982
Date harvested: June 1982
Soil type: sand 20%, silt 50%, clay 30%, pH 6.0, alluvium (clay loam)
Fertilizer used (kg/ha): N 25.0, P 60.0, K 30.0
Amount of moisture: 472.1 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
40	IGH 24		58.00		4.00		60.00			
9	Jupiter		45.25		3.50	2.25	63.75	88.75		
37	G 2120		62.00		3.25		68.33 (3)			
43	Alamo		53.50		4.25		60.00 (3)			
43	Alamo		54.00		4.00		63.75			
19	Davis	1049.38	45.50	108.75	3.50	2.00	77.50	93.75	36.60	1.00
19	Davis	962.69	46.25	106.75	3.50	2.25	63.75	90.00	39.75	1.00
48	Gail	892.68	39.75	93.25	3.50	3.50	66.25	85.00	27.80	1.00
15	Ransom	867.67	38.50	108.00	2.50	1.00	73.75	88.75	28.02	1.00
16	Cobb	828.08	38.00	86.75	3.50	2.50	65.00	91.25	30.15	1.00
13	Bossier	792.24	38.00	103.50	4.00	2.75	63.75	87.50	28.62	1.00
44	Foster	783.49	38.00	108.00	4.00	2.75	66.25	87.50	28.42	1.00
58	Williams 79	766.82	37.75	86.00	3.50	1.50	72.50	85.00	29.62	1.00
13	Bossier	739.31	38.00	103.50	3.50	2.50	68.75	88.75	29.57	1.00
10	Improved Pelican	629.71	48.00	142.50	4.25	2.75	71.67 (3)	91.67 (3)	68.82	1.00
2	UFV-1	296.73	46.50	145.00	4.00	3.25	62.50	90.00 (3)	33.52	1.00
	Grand mean	782.62	45.44	108.36	3.67	2.42	66.72	88.91	34.63	1.00
	Standard error of cultivar mean	51.99	.75	.92	.42	.53	8.31	5.57	2.29	0.00
	Coefficient of variation (%)	13.29	3.29	1.70	22.81	43.82	12.46	6.26	13.21	0.00
	5% LSD Cultivar means (*****=ns)	150.15	2.13	2.67	*****	*****	*****	*****	6.61	0.00

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
40	IGH 24									
9	Jupiter								38.9	21.7
37	G 2120									
43	Alamo									
43	Alamo								39.7	22.5
19	Davis	1.00	165.25	31.15	8.80	12.12	1.75	57.00	43.5	18.8
19	Davis	1.00	166.75	32.45	9.60	11.35	2.00	54.75	41.1	20.4
48	Gail	1.00	168.75	31.37	6.10	13.22	1.00	76.50	38.2	22.5
15	Ransom	1.00	169.00	27.25	7.17	13.37	2.25	48.50	39.7	22.0
16	Cobb	1.25	177.00	17.00	4.50	13.05	2.00	73.25	40.2	22.1
13	Bossier	1.00	164.75	25.52	6.82	13.35	2.25	37.00		
44	Foster	1.00	169.50	31.55	6.87	11.40	4.00	20.00	40.6	21.9
58	Williams 79	1.00	156.25	16.77	4.95	13.42	2.00	84.50		
13	Bossier	1.25	163.00	26.70	7.47	13.45	2.25	35.25	42.5	20.5
10	Improved Pelican	1.00	157.25	53.95	21.45	10.43	3.75	25.50	45.5	18.4
2	UFV-1	1.00	163.75	18.47	9.43	10.22	4.50	15.75	40.7	21.1
	Grand mean	1.05	165.57	28.38	8.47	12.31	2.52	48.00		
	Standard error of cultivar mean	.11	3.25	2.54	.64	.35	.17	9.76		
	Coefficient of variation (%)	20.73	3.93	17.89	15.17	5.63	13.36	40.65		
	5% LSD Cultivar means (*****=ns)	*****	9.40	7.33	1.86	1.00	.49	28.18		

Table 174. Experiment 198, 1981

Country: VIETNAM
Region: ASIA
Latitude: 10° 5′ N
Longitude: 105° 47′ E
Zone: 1
Elevation: 3 m

Site: EXPERIMENTAL FARM STATION OF UNIV. OF CANTHO
Cooperator(s): TRAN THUONG TUAN, NGUYEN KIM HA, VO-TUNG XUAN

Date planted: February 9, 1982
Date harvested: April 1982
Soil type: sand 8.8%, silt 48%, clay 43%, pH 5.35
Fertilizer used (kg/ha): N 25.0, P 60.0, K 30.0
Amount of moisture: 147.5 mm
Substitute cultivar: DH-4

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
40	IGH 24	2997.50	44.75	112.25	4.00	2.25	96.25	25.00	47.00	1.00
43	Alamo	2800.25	41.00	94.25	4.00	1.25	97.50	30.00	34.77	1.00
37	G 2120	2628.75	47.75	94.00	4.00	1.50	91.25	30.00	82.80	5.00
43	Alamo	2618.50	41.25	94.75	4.00	1.00	98.75	30.00	34.67	1.00
9	Jupiter	2476.00	35.00	95.25	3.25	1.00	97.50	26.25	51.52	1.00
2	UFV-1	1898.50	34.50	93.75	4.00	1.00	93.75	27.50	29.87	1.00
255	DH-4	1333.75	30.00	78.00	3.50	1.50	97.50	30.00	38.15	1.00
19	Davis	1319.75	32.00	87.00	3.00	1.50	91.25	27.50	22.45	1.00
16	Cobb	1316.25	27.75	78.00	3.25	2.00	90.00	25.00	32.77	1.00
48	Gail	1245.00	27.50	79.25	3.25	1.25	92.50	23.75	24.32	1.00
58	Williams 79	1198.25	30.50	78.25	4.00	2.25	91.25	27.50	32.05	1.00
13	Bossier	1135.25	28.25	87.75	3.25	2.25	90.00	25.00	20.02	1.00
44	Foster	1129.75	27.00	79.00	4.00	1.75	88.75	22.50	18.77	1.00
15	Ransom	1116.00	29.50	88.75	3.25	1.75	88.75	20.00	21.15	1.00
	Grand mean	1800.96	34.05	88.59	3.62	1.59	93.21	26.43	35.02	1.29
	Standard error of cultivar mean	140.01	.58	.60	.32	.30	1.68	1.92	2.42	0.00
	Coefficient of variation (%)	15.55	3.43	1.36	17.89	37.39	3.60	14.55	13.84	0.00
	5% LSD Cultivar means (*****=ns)	400.52	1.67	1.73	*****	.85	4.80	5.50	6.93	0.00

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
40	IGH 24	1.00	125.00	61.00	5.40	14.20				
43	Alamo	1.00	125.00	31.25	5.42	14.12				
37	G 2120	1.00	125.00	69.00	7.17	8.42				
43	Alamo	1.00	125.00	30.00	7.05	14.00				
9	Jupiter	1.00	125.00	34.50	11.02	14.57				
2	UFV-1	1.00	125.00	27.50	6.05	11.70				
255	DH-4	1.00	125.00	14.75	10.15	18.90				
19	Davis	1.00	125.00	20.50	5.92	13.32				
16	Cobb	1.00	125.00	17.50	6.65	16.02				
48	Gail	1.00	125.00	20.00	5.35	16.27				
58	Williams 79	1.00	125.00	17.50	7.00	15.67				
13	Bossier	1.00	125.00	20.00	5.55	13.17				
44	Foster	1.00	125.00	19.50	5.32	12.55				
15	Ransom	1.00	125.00	18.75	6.40	14.80				
	Grand mean	1.00	125.00	28.70	6.75	14.12				
	Standard error of cultivar mean	0.00	0.00	2.61	.98	.72				
	Coefficient of variation (%)	0.00	0.00	18.16	28.95	10.17				
	5% LSD Cultivar means (*****=ns)	0.00	0.00	7.45	2.79	2.05				

Table 175. Experiment 767, 1980

Country: ZAIRE
Region: AFRICA
Latitude: 6° S
Longitude: 23° 40′ E
Zone: 2
Elevation: 700 m

Site: MBUJIMAYI, KASAI ORIENTAL
Cooperator(s): T. R. WAYMAN, DOUG WELCH

Date planted: October 25, 1980
Date harvested: January 1981
Soil type: pH 6.0, OM 1.2%, mineral
Amount of moisture: 642 mm
Substitute cultivar: Kasai Kaniama Kasese

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
2	UFV-1	900.18	36.25	91.25	1.50	2.75	85.00	10.00	23.25	1.00
37	G 2120	795.99	46.50	93.75	1.75	2.25	71.25	12.50	58.50	1.50
39	IGH 23	731.40	41.25	93.25	2.00	2.00	83.75	51.25	38.75	1.25
43	Alamo	683.47	41.75	91.25	2.00	2.00	82.50	5.00	24.75	1.00
9	Jupiter	639.71	31.50	92.25	1.75	2.00	90.00	40.00	33.75	1.25
7767	Kasai Kaniama Kasese	625.12	37.25	84.75	1.50	5.00	77.50	10.00	28.75	1.25
41	UFV-1 (BP-2)	614.71	35.50	86.25	1.75	4.25	88.75	10.00	39.75	1.50
7	ICA Tunia	593.87	34.75	89.50	2.00	3.50	93.75	7.50	29.00	1.00
19	Davis	512.60	32.50	81.75	2.50	5.00	65.00		20.00	2.00
16	Cobb	502.18	36.50	83.00	1.75	5.00	85.00		19.50	1.50
10	Improved Pelican	456.34	33.25	87.00	1.75	4.25	98.75	25.00	45.25	1.75
8	ICA Caribe	450.09	36.25	95.25	1.75	2.00	88.75	65.00	51.00	1.00
40	IGH 24	435.50	46.50	95.50	1.75	1.75	87.50	50.00	32.50	1.00
13	Bossier	406.33	35.75	83.00	1.75	5.00	81.25		16.25	1.50
44	Foster	372.99	35.00	81.00	2.00	5.00	57.50		19.50	1.50
14	Williams	352.15	25.75	79.25	2.75	5.00	66.25		19.25	2.00
	Grand mean	567.04	36.64	88.00	1.89	3.55	81.41	17.89	31.23	1.38
	Standard error of cultivar mean	63.77	2.16	1.47	.30	.38	8.90	9.71	2.55	.26
	Coefficient of variation (%)	22.49	11.77	3.35	31.86	21.15	21.86	108.57	16.32	37.36
	5% LSD Cultivar means (*****=ns)	181.64	6.14	4.19	*****	1.07	*****	27.66	7.26	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
2	UFV-1	1.00	167.75	12.50	6.25		2.25			
37	G 2120	1.50	144.25	25.75	9.00		2.00			
39	IGH 23	1.00	134.25	14.75	15.00		2.25			
43	Alamo	1.00	126.25	12.25	8.00		2.00			
9	Jupiter	1.00	120.50	16.75	8.25		2.00			
7767	Kasai Kaniama Kasese	1.00	120.50	16.75	8.25		2.25			
41	UFV-1 (BP-2)	1.00	163.75	9.75	7.25		3.25			
7	ICA Tunia	1.25	96.75	15.00	7.25		1.50			
19	Davis	1.00	106.50	8.25	5.00		2.75			
16	Cobb	1.50	153.25	9.00	5.50		2.50			
10	Improved Pelican	1.00	72.25	20.50	7.00		2.00			
8	ICA Caribe	1.00	95.25	17.25	7.00		2.00			
40	IGH 24	1.00	86.50	18.50	10.00		2.50			
13	Bossier	1.00	128.75	8.50	5.75		2.50			
44	Foster	1.25	139.25	6.25	7.50		2.75			
14	Williams	2.00	119.75	7.50	5.75		2.75			
	Grand mean	1.16	124.89	13.30	7.70		2.31			
	Standard error of cultivar mean	.19	18.57	3.02	.94		.38			
	Coefficient of variation (%)	33.65	29.74	45.45	24.47		32.71			
	5% LSD Cultivar means (*****=ns)	.55	52.89	8.61	2.68		*****			

Table 176. Experiment 775, 1980

Country: ZAIRE
Region: AFRICA
Latitude: 2° 18′ S
Longitude: 28° 47′ E
Zone: 3
Elevation: 1331 m

Site: BUKAVU
Cooperator(s): G. H. BRIDGMON, N. T. MBIKAYI, ELUKESSAU-KOMBA L.

Date planted: September 29, 1980
Date harvested: January 1981
Soil type: sand 10%, silt 20%, clay 70%, pH 5.9
Amount of moisture: 1412 mm
Substituted cultivars: Imperial and IROG

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
14	Williams	2068.75	31.00	114.00	2.50	2.25	100.00	87.50	45.95	1.00
44	Foster	1957.06	45.00	124.00	3.25	3.00	100.00	76.25	44.40	2.25
7	ICA Tunia	1632.83	56.00	149.75	3.50	3.50	100.00	76.25	75.50	1.50
243	Imperial	1594.07	60.00	148.00	2.75	2.50	100.00	63.75	81.05	4.75
19	Davis	1411.53	52.00	135.00	3.00	3.00	100.00	75.00	52.45	1.00
41	UFV-1 (BP-2)	1386.94	60.00	166.00	3.00	3.50	100.00	70.00	110.85	1.50
7776	IROG	1333.60	47.00	124.00	3.00	2.50	98.75	92.50	72.70	3.50
2	UFV-1	1304.43	75.00	155.00	3.25	3.00	100.00	71.25	68.10	4.50
81	Ecuador 1	940.60	82.00	155.00	3.25	3.00	100.00	76.25	74.65	3.50
8	ICA Caribe	836.83	60.00	148.00	3.25	3.25	100.00	70.00	128.90	4.75
43	Alamo	782.66	82.00	166.00	3.50	3.25	98.75	78.75	82.70	2.25
37	G 2120	374.24	100.00	186.00	3.25	3.00	100.00	76.25	155.65	5.00
64	ICA L-125	166.28	60.00	186.00	3.50	2.75	98.75	88.75	121.80	3.50
9	Jupiter	106.27	84.00	186.00	3.25	3.75	100.00	52.50	100.40	4.75
39	IGH 23	37.51	103.00	186.00	3.00	3.25	100.00	41.25	106.90	5.00
40	IGH 24	11.67	110.00	197.00	3.50	3.50	97.50	36.25	89.10	4.75
	Grand mean	996.58	69.19	157.86	3.17	3.06	99.61	70.78	88.19	3.34
	Standard error of cultivar mean	152.22		.44	.22	.24	.65	6.44	5.09	.25
	Coefficient of variation (%)	30.55		.55	13.96	15.49	1.31	18.19	11.54	14.99
	5% LSD Cultivar means (*****=ns)	433.60		1.25	*****	.68	*****	18.34	14.49	.71

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
14	Williams	1.00	164.25	23.33	5.35	20.13	2.00	94.00		
44	Foster	1.00	184.50	25.08	7.75	19.13	2.50	90.25		
7	ICA Tunia	1.00	150.25	34.85	7.05	20.53	2.00	98.75		
243	Imperial	2.00	123.00	46.63	9.40	24.60	2.75	64.75		
19	Davis	1.00	163.00	16.73	6.35	20.15	2.25	82.00		
41	UFV-1 (BP-2)	1.00	118.25	42.40	7.40	19.60	3.25	88.50		
7776	IROG	1.00	155.00	42.90	11.15	15.95	2.75	91.00		
2	UFV-1	1.00	130.75	35.78	5.75	19.65	3.00	96.00		
81	Ecuador 1	1.00	114.00	37.70	6.30	20.18	2.25	87.75		
8	ICA Caribe	1.00	125.50	41.60	9.25	12.63	3.25	76.25		
43	Alamo	1.00	119.75	32.58	7.10	16.50	3.00	71.75		
37	G 2120	1.00	81.00	43.30	10.95	9.23	4.00	95.75		
64	ICA L-125	1.00	80.75	37.70	10.10	14.83	5.00	46.50		
9	Jupiter	1.00	106.00	17.98	11.30	16.98	5.00	60.00		
39	IGH 23	1.00	73.00	18.00	11.20	7.10	4.50	31.25		
40	IGH 24	1.00	96.75	24.63	6.45		5.00			
	Grand mean	1.06	124.11	32.57	8.30	16.07	3.28	73.41		
	Standard error of cultivar mean		10.45	3.98	.75	1.24	.21	6.50		
	Coefficient of variation (%)		16.84	24.44	18.08	15.48	12.60	17.71		
	5% LSD Cultivar means (*****=ns)		29.77	11.34	2.14	3.54	.59	18.51		

Table 177. Experiment 108, 1981

Country: ZAIRE
Region: AFRICA
Latitude: 2° 18′ S
Longitude: 28° 47′ E
Zone: 3
Elevation: 1331 m
Site: BUKAVU
Cooperator(s): G. H. BRIDGMON, MBAKAYI, ELUKESSU-KOMBA L.
Date planted: March 28, 1981
Date harvested: July 1981
Soil type: pH 6.2, dystropepts
Amount of moisture: 508 mm
Substitute cultivars: Tokyo-Vert, IR-09

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
2	UFV-1	1198.99	44.00	111.00	3.00	2.50	98.75	32.50	48.65	1.00
41	UFV-1 (BP-2)	1171.07	44.00	132.00	3.00	2.50	93.75	41.25	69.75	2.75
206	Tokyo-Vert	890.18	38.00	103.00	3.50	3.00	92.50	63.75	41.00	1.00
7	ICA Tunia	884.76	44.00	132.00	4.00	3.00	98.75	51.25	39.45	1.00
19	Davis	833.92	44.00	123.00	3.75	3.00	98.75	60.00	35.20	1.00
8	ICA Caribe	819.75	44.00	123.00	3.25	2.75	95.00	38.75	63.25	2.75
207	IR-09	806.83	44.00	103.00	3.25	3.50	100.00	70.00	52.10	2.50
44	Foster	800.16	38.00	103.00	2.75	2.50	100.00	88.75	32.55	1.00
43	Alamo	659.72	65.00	132.00	4.00	3.25	97.50	36.25	59.60	3.50
37	G 2120	658.46	72.00	160.00	3.25	2.50	98.75	51.25	96.90	4.00
9	Jupiter	595.95	72.00	160.00	3.75	3.75	93.75	51.25	61.60	2.00
13	Bossier	590.95	40.00	111.00	3.25	2.75	97.50	77.50	32.30	1.25
58	Williams 79	581.37	38.00	111.00	2.50	3.00	96.25	85.00	27.50	1.00
46	Ecuador 2	560.95	51.00	132.00	3.75	3.00	96.25	30.00	66.00	1.25
39	IGH 23	333.40	75.00	150.00	4.00	3.50	93.75	25.00	78.17	3.00
40	IGH 24	83.35	75.00	150.00	3.25	3.25	96.25	26.25	73.40	3.00
	Grand mean	716.86	51.75	127.25	3.39	2.98	96.72	51.80	54.84	2.00
	Standard error of cultivar mean	121.25	0.00	0.00	.21	.22	2.30	6.47	4.26	.22
	Coefficient of variation (%)	33.83	0.00	0.00	12.50	14.84	4.75	24.98	15.52	22.20
	5% LSD Cultivar means (*****=ns)	345.37	0.00	0.00	.60	.63	*****	18.43	12.12	.63

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
2	UFV-1	1.00	172.25	22.90	6.15	18.25	3.00	74.00		
41	UFV-1 (BP-2)	2.00	146.50	22.95	9.60	17.00	3.50	73.75		
206	Tokyo-Vert	2.00	135.50	21.95	6.35	22.75	3.00	72.25		
7	ICA Tunia	1.00	147.75	22.20	6.20	20.25	3.00	77.00		
19	Davis	1.75	121.25	24.75	6.00	17.25	3.00	79.25		
8	ICA Caribe	2.25	133.25	30.25	6.85	11.75	3.25	67.00		
207	IR-09	2.00	164.25	24.50	6.35	15.00	3.50	85.75		
44	Foster	1.00	166.50	21.30	4.70	15.50	3.25	77.75		
43	Alamo	1.25	155.75	23.60	9.10	12.75	3.50	64.25		
37	G 2120	1.00	147.00	14.70	6.37	8.50	5.00	56.50		
9	Jupiter	1.00	139.50	9.55	13.15	16.75	5.00	36.25		
13	Bossier	1.50	153.75	19.75	6.20	15.00	3.50	80.00		
58	Williams 79	1.00	145.75	24.80	6.00	16.25	3.00	59.75		
46	Ecuador 2	1.00	150.75	23.65	10.70	15.00	3.50	69.75		
39	IGH 23	1.00	133.25	13.15	8.95	13.00 (3)	5.00	28.50 (2)		
40	IGH 24	1.00	141.75	13.75	7.50	11.00 (1)	5.00	39.00 (1)		
	Grand mean	1.36	147.17	20.86	7.51	15.63	3.69	67.61		
	Standard error of cultivar mean	.13	7.37	1.55	.99	3.62	.18	18.54		
	Coefficient of variation (%)	18.84	10.01	14.88	26.35	23.14	9.90	27.42		
	5% LSD Cultivar means (*****=ns)	.36	20.98	4.42	2.82	*****	.52	*****		

Table 178. Experiment 242, 1981

Country: ZAIRE
Region: AFRICA
Latitude: 2° 19′ S
Longitude: 28° 45′ E
Zone: 3
Elevation: 2055 m

Site: MULUNGU: TSHIBINDA
Cooperator(s): QUYEN NGUYEN, ELUKESSU–KOMBA L., BOUWE

Date planted: April 10, 1982
Date harvested: August 1982
Soil type: pH 5.5, dystropets
Substitute cultivars: Imperial, Tokyo-Vert

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
48	Gail	587.20	55.00	134.00	2.75	2.50	100.00	85.00	37.50	1.00
19	Davis	511.35	66.00	161.00	3.00	3.25	93.75	78.75	30.40	1.00
51	Celest	408.41	30.00	140.75	3.00	2.75	95.00	48.75	22.75	1.00
47	PK-73-94	375.91	66.00	134.00	3.75	3.00	90.00	31.25	34.12	1.00
35	Crawford	360.49	48.00	140.75	2.75	2.25	95.00	90.00	32.70	1.00
2	UFV-1	356.32	72.25	160.50	3.25	3.25	97.50	67.50	46.75	1.00
49	Centennial	345.90	50.00	134.00	3.25	2.75	93.75	71.25	33.10	1.00
206	Tokyo-Vert	342.15	45.00	134.00	3.00	2.00	96.25	68.75	27.75	1.00
43	Alamo	325.06	87.00	161.00	3.75	3.50	96.25	32.50	43.17	1.50
16	Cobb	323.40	45.00	147.50	2.25	3.00	96.25	90.00	22.15	1.00
58	Williams 79	304.23	34.00	154.25	2.50	2.75	97.50	68.75	23.65	1.00
243	Imperial	291.31	66.00	161.00	2.25	2.25	83.75	80.00	42.45	1.50
244	AJ-2	257.97	59.00	140.75	3.25	2.50	100.00	72.50	35.25	1.00
52	Bay	218.79	50.00	161.00	3.25	3.25	91.25	86.25	34.50	1.25
53	Ware	201.71	34.00	134.00	3.50	3.25	91.25	75.00	20.00	1.00
44	Foster	176.29	48.00	147.50	3.00	2.75	91.25	60.00	28.40	1.00
	Grand mean	336.66	53.45	146.62	3.03	2.81	94.30	69.14	32.17	1.08
	Standard error of cultivar mean	59.38	.19	4.48	.27	.30	4.38	10.06	2.89	.16
	Coefficient of variation (%)	35.28	.70	6.10	17.69	21.28	9.29	29.09	17.99	29.18
	5% LSD Cultivar means (*****=ns)	169.14	.53	12.75	.76	.85	*****	28.64	8.24	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
48	Gail	1.25	181.25	16.75	6.90	11.25	3.00			
19	Davis	1.00	191.50	10.35	5.80	13.75	3.25			
51	Celest	1.25	184.50	8.52	7.15	13.00	3.50			
47	PK-73-94	1.00	195.00	14.10	8.15	9.25	2.50			
35	Crawford	1.00	194.00	14.05	5.55	12.50	3.00			
2	UFV-1	1.00	202.00	9.80	8.45	14.75	3.25			
49	Centennial	1.00	194.75	15.35	5.70	10.25	3.25			
206	Tokyo-Vert	1.00	195.00	11.05	4.50	10.50	3.00			
43	Alamo	1.00	196.25	6.02	7.50	12.75	4.00			
16	Cobb	1.00	184.50	10.75	4.50	14.00	3.25			
58	Williams 79	1.00	190.50	7.80	4.95	13.50	3.25			
243	Imperial	1.50	187.50	9.25	7.20	16.00	3.25			
244	AJ-2	2.50	191.25	11.80	8.95	14.00	3.00			
52	Bay	1.00	178.25	5.80	6.00 (3)	14.50	4.25			
53	Ware	1.50	184.50	5.15	5.70	14.75	3.25			
44	Foster	1.00	189.75	11.60	5.35	12.00	3.25			
	Grand mean	1.19	190.03	10.51	6.40	12.92	3.27			
	Standard error of cultivar mean	.18	6.50	1.21	1.95	.60	.21			
	Coefficient of variation (%)	30.75	6.84	23.07	30.42	9.23	12.87			
	5% LSD Cultivar means (*****=ns)	.52	*****	3.45	*****	1.70	.60			

Table 179. Experiment 1003, 1981

Country: ZAIRE
Region: AFRICA
Latitude: 2° 18′ S
Longitude: 28° 47′ E
Zone: 3
Elevation: 1331 m

Site: BUKAVU
Cooperator(s): QUYEN NGUYEN, ELUKESSU-KOMBA L., BOUWE

Date planted: March 16, 1982
Date harvested: July 1982
Soil type: pH 5.5
Substitute cultivars: Jaune D′ Eala, Imperial, Tokyo-Vert, Congo

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
2	UFV-1	1798.69	55.00	118.00	2.25	2.00	96.25	41.25	55.80	1.25
243	Imperial	1500.30	44.00	118.00	2.25	2.75	92.50	63.75	53.90	1.75
48	Gail	1479.88	41.00	118.00	2.50	2.25	92.50	78.75	43.35	1.00
206	Tokyo-Vert	1338.60	38.00	100.00	2.00	2.00	96.25	61.25	44.65	2.25
44	Foster	1269.00	36.00	118.00	2.00	2.00	98.75	51.25	33.80	1.00
19	Davis	1185.24	50.50	129.00	2.75	1.75	95.00	26.25	54.55	1.00
13	Bossier	1157.31	39.00	100.00	2.25	2.00	92.50	70.00	35.90	1.25
245	Jaune D′ Eala	1113.14	43.00	100.00	2.00	2.00	93.75	50.00	60.05	2.50
246	Congo	1061.88	50.50	129.00	2.50	2.25	100.00	25.00	57.20	1.00
15	Ransom	956.86	35.00	118.00	2.00	2.00	92.50	70.00	29.75	1.00
16	Cobb	877.95 (3)	30.33 (3)	106.67 (3)	2.00 (3)	2.00 (3)	91.67 (3)	51.67 (3)	30.93 (3)	1.00 (3)
43	Alamo	866.01	62.00	131.00	2.50	2.25	96.25	37.50	67.15	5.00
58	Williams 79	787.66	25.00	100.00	2.00	2.25	91.25	72.50	28.30	1.00
37	G 2120	590.95	71.00	145.00	2.25	2.25	98.75	32.50	84.25	3.50
9	Jupiter	337.15	60.00	156.00	2.50	2.75	95.00	45.00	79.25	2.50
40	IGH 24	249.63	76.00	163.00	2.75	2.25	96.25	50.00	85.55	2.00
	Grand mean	1038.14	47.54	122.10	2.29	2.17	95.00	51.67	53.12	1.83
	Standard error of cultivar mean	434.11	14.40	19.62	.46	.42	5.75	21.33	20.63	1.17
	Coefficient of variation (%)	41.82	30.29	16.07	19.92	19.44	6.05	41.28	38.83	64.17
	5% LSD Cultivar means (*****=ns)	*****	*****	*****	*****	*****	*****	*****	*****	*****

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
2	UFV-1	1.25	186.75	24.45	13.85	16.50	2.67 (3)	81.75		
243	Imperial	1.00	170.75	23.75	15.65	22.50	3.33 (3)	81.75		
48	Gail	1.00	186.25	17.75	12.10	19.25	3.00 (3)	74.00		
206	Tokyo-Vert	2.50	179.50	14.15	11.85	21.75	3.00 (3)	82.00		
44	Foster	1.00	181.25	18.60	9.55	16.75	3.00 (3)	78.50		
19	Davis	1.50	192.00	26.15	10.75	17.00	2.00 (3)	82.25		
13	Bossier	1.00	192.00	14.75	9.85	16.75	3.00 (3)	87.00		
245	Jaune D′ Eala	1.75	191.25	21.55	12.85	21.50	3.67 (3)	72.75		
246	Congo	1.00	194.25	22.65	12.05	16.75	2.33 (3)	86.50		
15	Ransom	1.00	181.00	13.75	7.95	18.75	3.67 (3)	73.50		
16	Cobb	1.00 (3)	187.67 (3)	14.07 (3)	9.40 (3)	17.33 (3)	2.33 (3)	86.67 (3)		
43	Alamo	1.00	188.25	22.25	16.85	11.75	3.00 (3)	72.00		
58	Williams 79	1.25	184.75	11.70	9.50	17.50	2.67 (3)	90.75		
37	G 2120	2.75	170.75	36.90	27.25	7.25	4.67 (3)	50.75		
9	Jupiter	1.00	144.50	21.50	23.00	19.25	4.00	65.75		
40	IGH 24	1.00	181.75	18.80	23.85	15.25	4.00 (3)	56.00		
	Grand mean	1.32	181.95	20.27	14.22	17.24	3.16	76.21		
	Standard error of cultivar mean	.64	16.81	7.03	6.12	4.15	.83	16.39		
	Coefficient of variation (%)	48.82	9.24	34.67	43.06	24.07	26.09	21.50		
	5% LSD Cultivar means (*****=ns)	*****	*****	*****	*****	*****	*****	*****		

Table 180. Experiment 777, 1980

Country: ZAMBIA
Region: AFRICA
Latitude: 16° 0′ S
Longitude: 27° 36′ E
Zone: 6
Elevation: 1018 m

Site: MAGOYE REGIONAL RESEARCH STATION
Cooperator(s): F. JAVAHERI

Date planted: December 15, 1980
Date harvested: May 1981
Amount of moisture: 961.4 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
16	Cobb	2903.91	32.25	93.00	2.50	1.00	35.00	98.75	49.75	1.00
19	Davis	2873.12	44.75	93.00	2.00	1.00	55.00	95.00	47.75	1.00
2	UFV-1	2783.06	45.50	102.00	1.50	1.00	56.25	95.00	61.50	2.00
66	Clark 63	2771.35	48.00	103.50	2.75	1.00	23.75	91.25	74.25	4.00
44	Foster	2512.84	30.00	88.00	2.25	1.00	43.75	100.00	33.75	1.00
9	Jupiter	2504.33	48.00	111.00	3.25	1.00	46.25	87.50	93.75	3.25
3	SJ-2	2470.33	44.00	97.00	3.25	1.00	46.25	92.50	95.75	4.75
7	ICA Tunia	2462.87	40.00	100.50	2.00	1.00	46.25	100.00	65.75	1.25
8	ICA Caribe	2346.64	48.00	111.00	2.00	1.00	26.25	92.50	96.25	3.75
41	UFV-1 (BP-2)	2318.40	40.00	100.00	2.25	1.00	31.25	93.75	89.25	3.25
64	ICA L-125	2142.85	54.00	108.00	2.50	1.00	45.00	88.75	98.25	4.00
14	Williams	2069.83	23.00	80.00	2.25	1.00	61.25	98.75	33.25	1.00
43	Alamo	2050.45	58.00	102.00	3.25	1.00	61.25	90.00	72.25	4.25
39	IGH 23	1917.97	62.00	111.00	2.50	1.00	56.25	88.75	99.25	3.50
37	G 2120	1648.62	62.00	102.00	2.50	1.00	60.00	80.00	101.00	4.50
40	IGH 24	1459.92	65.00	118.00	4.00	1.00	50.00	81.25	106.25	3.00
	Grand mean	2327.28	46.53	101.25	2.55	1.00	46.48	92.11	76.13	2.84
	Standard error of cultivar mean	199.84	1.94	.18	.44		13.96	4.26	3.20	.24
	Coefficient of variation (%)	17.17	8.34	.36	34.36		60.07	9.26	8.40	16.94
	5% LSD Cultivar means (*****=ns)	569.24	5.53	.52	1.25		*****	12.14	9.11	.69

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
16	Cobb	1.00	270.75	26.50	11.75	20.90	1.25			
19	Davis	1.00	298.25	18.25	14.00	22.60	1.25			
2	UFV-1	1.00	281.00	10.75	9.00	15.25	1.50			
66	Clark 63	1.00	243.50	22.25	12.00	72.80	1.00			
44	Foster	1.00	342.25	13.25	10.75	19.33	1.25			
9	Jupiter	1.00	316.00	32.00	6.50	18.40	1.25			
3	SJ-2	1.00	317.00	28.50	7.75	14.53	1.00			
7	ICA Tunia	1.00	300.00	14.25	8.00	22.10	1.00			
8	ICA Caribe	1.50	282.25	36.50	7.75	14.80	1.00			
41	UFV-1 (BP-2)	1.00	285.50	13.82	8.75	16.63	.75	.25		
64	ICA L-125	1.00	278.25	26.00	10.75	14.90	1.25			
14	Williams	1.00	280.50	11.75	8.75	21.83	1.75			
43	Alamo	2.00	298.50	13.75	9.25	15.78	1.00			
39	IGH 23	1.50	269.25	38.75	9.50	16.58	1.50			
37	G 2120	2.00	299.25	20.50	10.00	9.80	1.00			
40	IGH 24	1.50	221.00	38.00	23.50	14.98	1.00			
	Grand mean	1.22	286.45	22.80	10.50	20.70	1.17	.02		
	Standard error of cultivar mean	.36	14.12	3.36	1.63	12.62	.18	.06		
	Coefficient of variation (%)	59.69	9.86	29.44	31.08	121.90	31.36	800.00		
	5% LSD Cultivar means (*****=ns)	*****	40.22	9.56	4.65	*****	.52	*****		

Table 181. Experiment 778, 1980

Country: ZAMBIA
Region: AFRICA
Latitude: 15° 24′ S
Longitude: 28° 19′ E
Zone: 6
Elevation: 1154 m
Site: UNZA FARM LUSAKA
Cooperator(s): C. NISSLY AND F. JAVAHERI
Date planted: December 24, 1980
Date harvested: April 1981

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
7	ICA Tunia	2496.75	43.00	117.00	1.50		97.50		68.50	2.25
15	Ransom	2403.81	38.00	108.00	3.00		98.75		55.25	1.00
16	Cobb	2252.12	38.00	108.00	1.25		93.75		72.00	2.25
19	Davis	2247.95	43.00	108.00	2.25		92.50		64.25	2.25
2	UFV-1	1992.90	43.00	119.00	1.00		100.00		63.50	1.50
9	Jupiter	1937.89	50.00	122.00	1.50		95.00		91.75	3.75
41	UFV-1 (BP-2)	1905.80	41.75	112.00	3.25		98.75		84.25	3.25
3	SJ-2	1756.60	43.00	116.00	3.25		100.00		91.75	4.25
43	Alamo	1649.50	50.00	121.00	1.25		98.75		74.25	4.50
14	Williams	1600.32	37.25	92.00	3.25		310.00		46.00	1.00
39	IGH 23	1514.47	64.00	122.00	1.25		98.75		97.50	3.50
44	Foster	1504.05	38.00	108.00	1.25		88.75		52.50	2.50
81	Ecuador 1	1460.29	47.50	117.00	1.75		100.00		72.50	2.75
64	ICA L-125	1447.79	50.00	97.00	3.50		97.50		92.75	3.50
37	G 2120	1381.53	64.00	113.00	3.00		96.25		104.25	5.00
	Grand mean	1836.78	46.03	112.00	2.15		111.08		75.40	2.88
	Standard error of cultivar mean	172.22	1.30	.52	.33		55.07		4.40	.29
	Coefficient of variation (%)	18.75	5.64	.92	30.87		99.15		11.68	20.07
	5% LSD Cultivar means (*****=ns)	491.54	3.70	1.47	.95		*****		12.57	.83

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
7	ICA Tunia		225.25	62.25	6.75	18.75			45.2	16.1
15	Ransom		224.00	18.25	8.25	18.75			43.3	22.4
16	Cobb		177.75	39.75	7.75	17.00			42.4	20.7
19	Davis		212.50	31.75	7.75	17.00			44.0	19.7
2	UFV-1		147.00	49.75	8.50	14.25			45.6	18.6
9	Jupiter		183.25	58.50	14.50	16.75			44.3	17.3
41	UFV-1 (BP-2)		187.50	45.75	12.00	14.00			44.6	18.8
3	SJ-2		186.25	65.00	10.25	14.50			42.5	20.6
43	Alamo		191.00	41.75	10.50	13.00			45.5	17.8
14	Williams		216.00	21.50	5.25	17.25			45.0	20.5
39	IGH 23		140.25	79.00	19.75	16.00			46.9	15.0
44	Foster		196.50	27.50	8.50	12.50			43.6	21.6
81	Ecuador 1		148.00	54.75	9.75	20.25			45.4	18.6
64	ICA L-125		119.50	81.50	12.25	16.00			42.7	17.2
37	G 2120		220.50	77.50	11.00	7.00			43.2	17.7
	Grand mean		185.02	50.30	10.18	15.53				
	Standard error of cultivar mean		17.41	6.08	1.78	.87				
	Coefficient of variation (%)		18.82	24.19	34.87	11.20				
	5% LSD Cultivar means (*****=ns)		49.68	17.37	5.07	2.48				

Table 182. Experiment 779, 1980

Country: ZAMBIA
Region: AFRICA
Latitude: 12° 38′ S
Longitude: 28° 10′ E
Zone: 6
Elevation: 1234 m
Site: COPPERBELT RESEARCH STATION
Cooperator(s): R. N. SINGH, F. JAVAHERI
Date planted: January 8, 1981
Date harvested: March 1981
Amount of moisture: 1481.80 mm

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
7	ICA Tunia	2104.59	42.00	98.00	1.00	1.00	100.00	93.75	66.00	1.00
19	Davis	2029.57	42.00	94.00	1.00	1.00	100.00	63.75	54.00	1.00
9	Jupiter	1958.72	44.00	128.50	2.75	1.00	100.00	78.75	92.25	2.25
13	Bossier	1933.72	34.00	108.00	1.00	1.50	100.00	98.75	60.75	1.00
15	Ransom	1858.70	34.00	92.00	1.00	1.00	100.00	98.75	37.75	1.00
14	Williams	1825.36	29.00	88.00	1.50	1.00	100.00	71.25	43.25	1.50
2	UFV-1	1812.86	47.50	94.00	1.00	1.00	100.00	68.75	61.25	1.25
16	Cobb	1771.19	38.00	98.00	1.50	1.00	100.00	97.50	49.25	1.00
81	Ecuador 1	1733.68	49.50	94.00	1.00	1.00	100.00	71.25	71.75	1.25
44	Foster	1696.17	31.00	88.00	2.00	1.00	100.00	92.50	47.25	1.75
3	SJ-2	1633.66	49.00	108.00	3.00	1.00	100.00	78.75	87.00	1.00
43	Alamo	1621.16	51.25	98.00	1.00	1.00	85.00	76.25	77.00	1.00
64	ICA L-125	1337.77	51.25	108.00	1.00	1.00	100.00	93.75	83.00	2.00
40	IGH 24	1216.91	64.00	148.00	1.00	1.00	100.00	85.00	90.50	1.00
39	IGH 23	1112.72	59.00	128.50	1.00	1.00	100.00	92.50	95.50	1.25
37	G 2120	516.77	59.00	140.00	1.00	1.00	100.00	71.25	93.25	1.25
	Grand mean	1635.22	45.28	107.06	1.36	1.03	99.06	83.28	69.36	1.28
	Standard error of cultivar mean	126.73	2.18	2.56	.44	.13	3.75	9.00	3.96	.16
	Coefficient of variation (%)	15.50	9.61	4.79	65.06	24.24	7.57	21.61	11.41	24.51
	5% LSD Cultivar means (*****=ns)	360.98	6.20	7.30	1.26	*****	*****	*****	11.27	.45

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
7	ICA Tunia	2.25	359.50	11.25	16.48	14.35			46.7	16.4
19	Davis	2.00	352.75	11.25	15.15	14.70			45.5	18.2
9	Jupiter	2.25	346.00	11.25	32.75	12.03			45.3	17.7
13	Bossier	1.75	335.25	11.00	15.40	17.33			46.6	17.6
15	Ransom	2.00	318.25	6.00	11.48	19.40			44.7	21.6
14	Williams	1.75	304.00	7.25	12.33	19.70			44.2	20.0
2	UFV-1	2.00	286.25	8.75	18.75	12.15			45.6	17.6
16	Cobb	1.75	342.25	9.75	13.88	17.25			45.2	18.7
81	Ecuador 1	3.25	308.25	11.75	21.68	14.63			45.2	17.6
44	Foster	1.50	338.50	12.75	16.25	15.45			45.2	18.9
3	SJ-2	3.25	329.75	11.75	22.28	10.70			45.9	15.9
43	Alamo	2.00	334.00	11.75	26.73	10.60			46.6	16.6
64	ICA L-125	2.00	309.00	11.00	20.30	10.08			47.0	16.4
40	IGH 24	1.50	311.50	8.25	44.30	14.48			43.6	17.3
39	IGH 23	1.50	338.00	8.75	44.05	12.43			46.6	16.0
37	G 2120	3.75	335.75	18.50	32.08	5.70			48.4	12.7
	Grand mean	2.16	328.06	10.69	22.74	13.81				
	Standard error of cultivar mean	.22	16.44	2.16	2.00	.58				
	Coefficient of variation (%)	20.38	10.02	40.48	17.59	8.36				
	5% LSD Cultivar means (*****=ns)	.63	*****	*****	5.70	1.64				

Table 183. Experiment 177, 1981

Country: ZAMBIA
Region: AFRICA
Latitude: 13° 39′ S
Longitude: 32° 34′ E
Zone: 6
Elevation: 1025 m

Site: MSEKERA REGIONAL RESEARCH STATION
Cooperator(s): F. JAVAHERI

Date planted: December 11, 1981 Date harvested: April 1982
Soil type: sand 10.64%, silt 5.6%, clay 14.95%, pH 4.82, sandy clay loam
Fertilizer used (kg/ha): N 30.0, P 26.4, K 24.9
Amount of moisture: 703.9 mm
Substitute cultivars: Magoye and Kaleya

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
9	Jupiter	1287.76	50.00	121.00	5.00	3.25		46.25	72.02	1.00
40	IGH 24	1271.09	61.75	127.25	5.00	4.67 (3)		90.00 (1)	73.10	1.00
58	Williams 79	1062.71	25.25	77.75	5.00	5.00 (3)		100.00 (1)	37.80	1.00
44	Foster	1054.38	25.75	83.25	5.00	4.33 (3)		92.50 (2)	27.75	1.00
15	Ransom	976.45	26.75	80.00	4.75	3.25	100.00 (1)	96.25	26.57	1.00
41	UFV-1 (BP-2)	888.09	35.75	94.25	5.00	3.67 (3)		72.50 (2)	81.17	1.00
226	Magoye	863.92	38.50	117.25	4.75	1.33 (3)	100.00 (1)	11.25	46.90	1.00
37	G 2120	841.83	57.25	110.00	5.00	3.75		7.50 (2)	83.05	1.00
8	ICA Caribe	787.66	45.00	112.00	4.50	3.00 (3)	82.50 (2)	33.75	84.17	2.50
16	Cobb	780.57	30.00	86.00	5.00	4.50		100.00 (2)	31.50	1.00
227	MV-1	773.07	31.00	86.25	5.00	4.50		95.00 (1)	39.20	1.00
2	UFV-1	743.90	41.50	100.50	5.00	4.67 (3)		80.00 (2)	59.30	1.00
13	Bossier	698.06	26.25	81.00	5.00	4.67 (3)		100.00 (1)	29.22	1.00
19	Davis	677.22	34.25	86.75	4.75	2.50	95.00 (1)	100.00	35.02	1.00
43	Alamo	491.76	48.25	107.50	5.00	3.75		15.00 (3)	63.57	1.00
225	Kaleya	377.16	42.00	100.50	5.00	4.25		90.00 (2)	51.02	1.00
	Grand mean	848.48	38.70	98.20	4.92	3.80	92.00	63.21	52.59	1.09
	Standard error of cultivar mean	86.76	2.52	2.18	.13	1.39	9.08	37.86	3.20	.22
	Coefficient of variation (%)	20.45	13.03	4.45	5.31	36.64	9.87	59.90	12.15	39.59
	5% LSD Cultivar means (*****=ns)	247.12	7.18	6.22	*****	*****	*****	*****	9.10	.62

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
9	Jupiter	1.00	207.25	17.75	9.85	27.25	3.00		41.2	21.3
40	IGH 24	1.00	200.25	27.12	9.27	22.75	1.00			
58	Williams 79	1.00	198.00	11.37	8.50	23.50	1.25			
44	Foster	1.00	200.25	15.20	6.07	19.75	1.50			
15	Ransom	1.00	206.00	14.77	6.25	20.50	1.75		39.0	21.8
41	UFV-1 (BP-2)	1.00	198.75	19.55	8.80	19.75	2.00		39.1	21.1
226	Magoye	1.00	175.75	21.52	5.30	19.00	3.50		40.7	20.5
37	G 2120	1.00	210.50	20.92	4.02	12.75	3.00		48.0	17.3
8	ICA Caribe	1.00	201.00	20.05	10.02	19.25	2.50		47.1	18.6
16	Cobb	1.00	180.50	18.75	6.20	19.50	1.50		37.9	21.7
227	MV-1	1.00	217.50	15.22	7.55	19.75	1.00			
2	UFV-1	1.00	202.75	17.92	5.55	19.00	2.75		42.4	20.2
13	Bossier	1.00	202.25	12.05	6.80	18.75	1.00			
19	Davis	1.00	198.00	15.37	7.80	19.50	2.75		41.9	20.5
43	Alamo	1.00	202.50	18.67	6.52	21.00	2.75		45.9	19.5
225	Kaleya	1.00	195.00	15.15	8.17	19.50	3.25		38.5	21.8
	Grand mean	1.00	199.77	17.59	7.29	20.09	2.16			
	Standard error of cultivar mean	0.00	8.23	3.11	1.01	1.22	.37			
	Coefficient of variation (%)	0.00	8.24	35.36	27.75	12.17	34.00			
	5% LSD Cultivar means (*****=ns)	0.00	*****	*****	2.88	3.48	1.04			

Table 184. Experiment 183, 1981

Country: ZAMBIA
Region: AFRICA
Latitude: 16° 0′ S
Longitude: 27° 36′ E
Zone: 6
Elevation: 1018 m

Site: MAGOYE REGIONAL RESEARCH STATION
Cooperator(s): F. JAVAHERI

Date planted: December 18, 1981 Date harvested: March 1982
Fertilizer used (kg/ha): N 30.0, P 26.4, K 24.9
Amount of moisture: 534.6 mm
Substitute cultivars: Ransom, Cobb, Kaleya, MV-1

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
15	Ransom	2643.28	26.75	84.50	3.00	1.00	48.75	98.75	31.00	1.00
44	Foster	2615.73	26.00	83.00	3.00	1.00	40.00	100.00	30.00	1.00
227	MV-1	2613.44	33.00	86.50	3.25	1.00	17.50	98.75	36.50	1.00
19	Davis	2515.42	34.50	87.25	2.50	1.00	66.25	95.00	17.50	1.00
58	Williams 79	2454.66	26.00	79.50	1.50	1.00	78.75	97.50	41.50	1.00
16	Cobb	2452.32	26.00	80.50	3.00	2.00	81.25	96.25	43.75	1.00
13	Bossier	2263.70	26.50	84.50	2.25	1.00	50.00	97.50	25.75	1.00
41	UFV-1 (BP-2)	2040.57	35.00	103.00	3.00	1.00	41.25	60.00	99.00	2.00
225	Kaleya	1877.08	43.00	102.00	3.00	1.00	17.50	82.50	45.75	1.75
2	UFV-1	1818.86	44.50	102.00	3.00	1.00	40.00	71.25	57.00	1.50
8	ICA Caribe	1550.98	49.00	108.75	2.50	2.50	57.50	75.00	95.50	2.25
43	Alamo	1509.34	52.50	102.00	3.00	2.50	36.25	27.50	60.00	1.50
226	Magoye	1479.30	49.00	103.50	3.00	3.00	96.25	25.00	57.00	1.50
9	Jupiter	1453.42	56.50	113.25	3.00	2.00	43.75	21.25	77.00	1.75
40	IGH 24	1002.03	53.75	124.00	3.00	2.50	18.75	45.00	85.25	2.25
37	G 2120	844.88	56.75	105.00	3.00	2.00	12.50	38.75	92.25	3.50
	Grand mean	1945.94	39.92	96.83	2.81	1.59	46.64	70.62	55.92	1.56
	Standard error of cultivar mean	177.67	1.41	.92	.29	.33	13.54	10.63	3.24	.25
	Coefficient of variation (%)	18.26	7.05	1.89	20.95	41.10	58.07	30.10	11.59	32.18
	5% LSD Cultivar means (*****=ns)	506.07	4.01	2.61	.84	.93	38.57	30.28	9.23	.72

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
15	Ransom	1.00 (3)	244.75	17.75	7.75	19.97	1.00			
44	Foster	1.00 (3)	318.00	13.25	8.50	16.65	1.00			
227	MV-1	1.00 (3)	293.25	17.50	11.75	15.40	1.00		39.5	21.6
19	Davis	1.00 (3)	218.50	19.50	10.00	16.90	1.00			
58	Williams 79	1.00 (3)	247.75	15.75	9.00	20.27	1.00			
16	Cobb	1.00 (3)	234.00	17.00	8.50	20.90	1.00			
13	Bossier	1.00 (3)	231.75	18.00	11.25	18.85	1.00			
41	UFV-1 (BP-2)	1.00 (3)	229.50	28.50	15.75	15.05	1.00			
225	Kaleya	1.00 (3)	180.00	24.25	12.00	14.32	1.00			
2	UFV-1	1.00 (3)	247.50	20.00	14.25	12.75	1.00			
8	ICA Caribe	1.00 (3)	265.50	24.00	17.50	12.75	1.50			
43	Alamo	1.00 (3)	223.75	23.75	17.00	13.02	1.50			
226	Magoye	1.00 (3)	158.50	33.50	13.00	10.52	1.50			
9	Jupiter	1.00 (3)	146.25	22.50	21.50	16.27	1.25			
40	IGH 24	1.00 (3)	188.75	19.00	29.75	16.02	1.00			
37	G 2120	1.00 (3)	292.25	34.00	22.00	7.12	1.00			
	Grand mean	1.00	232.50	21.77	14.34	15.42	1.11			
	Standard error of cultivar mean	0.00	18.25	1.75	1.77	.72	.14			
	Coefficient of variation (%)	0.00	15.70	16.07	24.71	9.29	25.86			
	5% LSD Cultivar means (*****=ns)	0.00	51.99	4.98	5.05	2.04	.41			

Table 185. Experiment 197, 1981

Country: ZAMBIA
Region: AFRICA
Latitude: 12° 38′ S
Longitude: 28° 10′ E
Zone: 6
Elevation: 1243 m

Site: COPPERBELT REGIONAL RESEARCH STATION
Cooperator(s): F. JAVAHERI

Date planted: December 12, 1981 Date harvested: RIL, 1982
Soil type: sand 25.2%, silt 10.8%, clay 6.8%, pH 4.77, sandy loam
Fertilizer used (kg/ha): N 30.0, P 26.4, K 24.9
Amount of moisture: 956 mm
Substitute cultivars: Magoye and Kaleya

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
19	Davis	3133.96		85.00	2.25	2.25	98.75	97.50	58.50	1.00
2	UFV-1	3075.61		88.00	2.75	2.00	96.25	98.75	68.25	1.00
44	Foster	3013.10		64.00	3.25	3.25	98.75	98.75	46.00	1.00
19	Davis	3000.60		85.00	3.75	3.50	97.50	93.75	57.75	1.00
225	Kaleya	2950.59		90.00	3.50	2.25	95.00	92.50	66.75	1.00
226	Magoye	2933.92		94.00	2.75	2.75	100.00	100.00	53.00	1.00
15	Ransom	2904.75		91.50	3.50	2.75	97.50	96.25	43.75	1.00
13	Bossier	2796.39		74.00	3.75	3.50	100.00	96.25	44.25	1.00
58	Williams 79	2646.36		61.00	3.00	2.75	93.75	88.75	42.75	1.00
9	Jupiter	2596.35		99.50	2.25	3.50	97.50	100.00	86.75	1.00
48	Gail	2550.51		77.00	2.75	3.50	95.00	90.00	48.25	1.00
43	Alamo	2513.00		91.00	2.75	2.50	86.25	93.75	76.00	1.00
16	Cobb	2367.14		64.00	3.75	4.00	93.75	97.50	41.50	1.00
37	G 2120	2321.30		95.00	3.25	2.75	85.00	96.25	95.25	1.00
40	IGH 24	2296.29		112.00	3.50	4.00	100.00	96.25	90.00	1.00
43	Alamo	2212.94		88.00	3.25	2.50	87.50	96.25	67.25	1.00
	Grand mean	2707.05		84.94	3.12	2.98	95.16	95.78	61.62	1.00
	Standard error of cultivar mean	150.12		2.28	.53	.53	3.28	3.15	3.89	0.00
	Coefficient of variation (%)	11.09		5.37	33.77	35.48	6.89	6.58	12.64	0.00
	5% LSD Cultivar means (*****=ns)	427.61		6.49	*****	*****	9.33	*****	11.09	0.00

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
19	Davis	1.00	334.50	19.85	14.93	20.67	1.75			
2	UFV-1	1.00	316.50	15.10	19.22	15.10	2.50			
44	Foster	1.00	277.25	12.02	10.57	16.40	2.50		41.9	21.4
19	Davis	1.00	325.25	13.97	15.65	19.32	2.25			
225	Kaleya	1.00	253.25	15.32	19.50	16.07	2.25			
226	Magoye	1.50	186.75	10.50	15.32	12.30	2.00			
15	Ransom	2.25	281.75	13.32	12.10	19.85	1.75			
13	Bossier	1.00	296.00	13.47	10.82	19.85	2.50		45.8	20.2
58	Williams 79	1.00	336.25	8.60	10.20	20.97	2.00		43.6	20.1
9	Jupiter	1.25	307.50	8.55	23.42	16.92	2.00		44.8	19.2
48	Gail	1.75	256.50	20.47	12.22	18.60	2.50			
43	Alamo	1.50	315.50	17.02	22.17	14.17	2.00			
16	Cobb	1.50	288.00	12.02	10.50	20.30	1.75		41.4	20.8
37	G 2120	2.00	527.25	13.82	25.60	6.47	2.00			
40	IGH 24	1.25	343.25	8.30	28.97	16.30	2.00			
43	Alamo	1.50	323.50	17.52	20.70	15.15	2.00			
	Grand mean	1.34	310.56	13.74	17.00	16.78	2.11			
	Standard error of cultivar mean	.25	18.82	2.19	1.61	.88	.31			
	Coefficient of variation (%)	37.52	12.12	31.81	18.91	10.48	29.84			
	5% LSD Cultivar means (*****=ns)	.72	53.62	6.23	4.58	2.50	*****			

Table 186. Experiment 826, 1980

Country: ZIMBABWE
Region: AFRICA
Latitude: 17° 48′ S
Longitude: 31° 3′ E
Zone: 6
Elevation: 1506 m

Site: HARARE RESEARCH STATION
Cooperator(s): J. R. TATTERFIELD and J. S. TICHAGWA

Date planted: November 20, 1980
Date harvested: March 1981
Soil type: sand 27%, silt 20%, clay 53%, pH 5.7
Fertilizer used (kg/ha): K 50
Amount of moisture: 988 mm
Number of irrigations: 2 (30 mm)
Substitute cultivars: Oribi and Impala

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
44	Foster	3765.02	47.00	127.00	3.50	2.00	97.50	63.75	70.00	3.75
217	Oribi	3723.36	47.00	131.00	3.50	2.75	90.00	80.00	78.75	3.00
50	DeSoto	3655.66	30.00	103.00	2.00	2.50	96.25	25.00	61.25	1.00
5681	Impala	3317.18	54.00	127.00	4.00	2.50	97.50	58.75	80.00	1.50
48	Gail	3306.76	47.00	127.00	3.00	2.00	88.75	77.50	66.25	2.75
47	PK-73-94	3228.65	54.00	138.00	2.00	2.00	98.75	60.00	78.75	5.00
52	Bay	3181.78	43.00	131.00	3.00	2.50	86.25	67.50	75.00	3.50
19	Davis	3166.16	57.00	138.00	3.00	2.00	92.50	76.25	80.00	4.75
13	Bossier	3155.74	43.00	131.00	2.50	2.00	95.00	85.00	67.50	4.25
14	Williams	3145.33	30.00	103.00	2.00	2.00	96.25	43.75	52.50	1.00
2	UFV-1	2942.24	75.00	159.00	3.00	2.25	93.75	73.75	118.75	5.00
49	Centennial	2942.24	47.00	117.00	2.50	2.00	97.50	60.00	71.25	4.75
51	Celest	2942.24	43.00	113.00	4.00	2.50	96.25	75.00	55.00	1.00
43	Alamo	2228.81	85.00	159.00	3.00	2.00	95.00	75.00	117.50	5.00
37	G 2120	2062.17	85.00	159.00	4.00	2.25	86.25	85.00	170.00	5.00
53	Ware	1984.06	30.00	106.00	2.00	2.50	88.75	25.00	35.00	1.00
	Grand mean	3046.71	51.06	129.31	2.94	2.23	93.52	64.45	79.84	3.27
	Standard error of cultivar mean	75.22			.33	.29	2.90	10.15	2.67	.17
	Coefficient of variation (%)	4.94			22.55	26.33	6.21	31.51	6.68	10.16
	5% LSD Cultivar means (*****=ns)	214.25			.94	*****	8.27	28.92	7.59	.47

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
44	Foster	1.00	197.75	42.68	12.03	17.90	2.00	93.75	42.3	20.6
217	Oribi	1.00	200.00	38.08	14.75	23.63	2.00	96.50	41.5	20.0
50	DeSoto	1.00	200.00	23.90	5.20	22.58	2.50	88.00	42.4	20.1
5681	Impala	1.00	199.25	30.13	15.10	23.80	2.00	93.00	39.4	21.1
48	Gail	1.00	200.00	27.70	11.30	24.48	3.00	95.75	45.6	18.6
47	PK-73-94	1.00	199.50	54.18	13.00	18.05	2.25	91.75	42.3	19.8
52	Bay	1.00	200.00	32.98	10.35	21.75	3.00	85.00	43.0	20.5
19	Davis	1.00	197.00	46.00	9.05	21.75	2.00	91.75	42.7	21.4
13	Bossier	1.00	198.25	37.85	9.20	20.48	3.00	80.75	44.2	21.3
14	Williams	1.00	198.75	21.08	4.90	22.20	2.75	91.25	42.8	20.8
2	UFV-1	1.00	197.75	77.05	16.18	17.50	2.50	92.25	43.8	19.0
49	Centennial	1.00	199.25	29.28	14.93	19.03	3.00	93.75	43.3	19.5
51	Celest	1.00	197.00	25.00	10.38	20.28	2.50	95.50	40.1	20.7
43	Alamo	1.00	200.00	82.20	21.93	14.68	2.50	88.00	43.8	17.7
37	G 2120	1.00	196.25	150.20	20.85	7.38	3.00	94.25	44.9	14.8
53	Ware	1.00	197.25	18.70	7.60	22.78	3.50	82.00	42.1	18.6
	Grand mean	1.00	198.63	46.06	12.30	19.89	2.59	90.83		
	Standard error of cultivar mean		1.58	3.51	.71	.35	.20	3.23		
	Coefficient of variation (%)		1.60	15.26	11.59	3.50	15.14	7.10		
	5% LSD Cultivar means (*****=ns)		*****	10.01	2.03	.99	.56	9.19		

Table 187. Experiment 349, 1981

Country: ZIMBABWE
Region: AFRICA
Latitude: 17° 68′ S
Longitude: 31° 3′ E
Zone: 6
Elevation: 1506 m

Site: HARARE RESEARCH STATION
Cooperator(s): J. R. TATTERSFIELD, J. S. TICHAGWA

Date planted: November 26, 1981 Date harvested: March 1982
Soil type: sand 23%, silt 21%, clay 56%, pH 5.6
Fertilizer used (kg/ha): K 49.8
Amount of moisture: 645.6 mm
Number of irrigations: 5 (120 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
217	Oribi	3846.78	50.00	132.00	3.50	3.00	97.50	80.00	78.75	2.00
50	DeSoto	3323.43	29.00	103.00	2.00	1.50	96.25	93.75	55.00	1.00
60	Kent	3297.39	33.00	110.00	3.00	3.00	97.50	90.00	63.75	1.00
51	Celest	3175.01	47.00	110.00	2.50	2.00	93.75	87.50	58.75	1.00
74	Pella	3062.01	29.00	103.75	3.00	2.00	98.75	78.75	47.50	1.00
35	Crawford	2989.63	33.00	110.00	2.50	1.50	97.50	86.25	66.25	1.25
58	Williams 79	2875.58	29.00	100.00	2.50	2.00	97.50	77.50	48.75	1.00
73	Century	2740.71	29.00	101.00	3.00	2.00	96.25	87.50	40.00	1.00
72	Amcor	2735.50	29.00	99.00	4.00	3.00	97.50	71.25	47.50	1.00
61	Cumberland	2609.48	29.00	100.00	2.50	1.75	95.00	86.25	42.50	1.00
59	Will	2578.75	29.00	99.00	2.50	2.00	96.25	70.00	38.75	1.00
55	Harlon	2218.39	26.00	92.00	2.00	2.00	95.00	57.50	40.00	1.00
57	Corsoy 79	2179.86	26.00	100.25	2.50	2.50	97.50	68.75	36.25	1.00
36	Evans	1859.08	26.00	92.00	2.50	3.50	96.25	51.25	31.25	1.00
38	McCall	1625.26	26.00	92.00	2.00	3.00	97.50	42.50	33.75	1.00
70	Hardin	1462.27	26.00	110.00	2.50	2.50	86.25	45.00	33.75	1.00
	Grand mean	2661.20	31.00	103.37	2.66	2.33	96.02	73.36	47.66	1.08
	Standard error of cultivar mean	109.97	0.00	.87	.44	.40	3.14	6.27	2.06	.16
	Coefficient of variation (%)	8.26	0.00	1.68	33.35	34.08	6.54	17.09	8.66	28.77
	5% LSD Cultivar means (*****=ns)	313.23	0.00	2.48	*****	1.13	*****	17.85	5.88	.44

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
217	Oribi	1.00	200.00	32.90	11.12	20.57	1.25	96.50	39.2	23.2
50	DeSoto	1.00	200.00	30.30	3.00	21.05	2.00	96.75	41.4	21.9
60	Kent	1.25	200.00	24.20	3.77	22.47	2.00	84.25	42.8	21.5
51	Celest	1.00	195.50	24.20	7.45	19.67	2.00	96.00	40.0	22.5
74	Pella	1.00	200.00	21.65	3.47	23.12	1.75	91.25	42.0	23.1
35	Crawford	1.00	190.50	23.85	3.72	18.60	1.75	92.25	42.0	22.0
58	Williams 79	1.00	200.00	23.05	3.60	20.82	1.75	91.00	41.4	21.5
73	Century	1.00	200.00	20.87	2.92	20.30	2.00	93.25	44.0	22.5
72	Amcor	1.00	200.00	37.42	2.50	17.80	2.25	89.25	37.1	24.5
61	Cumberland	1.25	199.75	22.35	2.47	21.20	2.00	91.50	41.2	22.5
59	Will	1.00	200.00	22.70	2.82	19.22	2.00	93.00	39.0	22.8
55	Harlon	1.75	200.00	23.77	2.65	16.57	3.00	93.75	39.1	22.7
57	Corsoy 79	1.00	200.00	28.40	2.30	16.17	3.00	86.25	41.0	21.2
36	Evans	1.00	200.00	22.35	2.10	14.25	4.00	96.25	37.8	23.5
38	McCall	1.00	199.75	22.47	2.45	13.95	3.00	94.75	39.4	22.0
70	Hardin	1.00	200.00	21.07	2.20	19.37	3.00	83.25	42.1	22.9
	Grand mean	1.08	199.09	25.10	3.66	19.07	2.30	91.83		
	Standard error of cultivar mean	.10	2.56	1.87	.32	.36	.14	2.34		
	Coefficient of variation (%)	19.32	2.58	14.88	17.29	3.80	12.28	5.09		
	5% LSD Cultivar means (*****=ns)	.30	*****	5.32	.90	1.03	.40	6.65		

Agronomic Characteristics for Individual Sites, 1979

Table 188. Experiment 570, 1979

Country: BELIZE
Region: MESO-AMERICA
Latitude: 17° N
Longitude: 89° W
Zone: 5
Elevation: 61 m
Site: CENTRAL FARM
Cooperator(s): P. COLLINS (C.A.R.D.I.)
Date planted: February 15, 1980
Date harvested: May 1980
Fertilizer used (kg/ha): N 25, P 25, K 25

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
24	Mitchell	1685.75	37.25	66.50					41.00	1.00
21	Calland	1461.96	39.75	68.50					41.50	1.00
14	Williams	1441.12	36.50	66.75					40.25	1.00
17	James	1369.86	39.50	69.75					39.75	1.00
23	Cutler 71	1356.94	30.50	61.50					40.75	1.00
18	Forrest	1294.01	37.25	71.50					31.25	1.00
22	Franklin	1200.24	31.25	59.00					37.50	1.00
	Grand mean	1401.41	36.00	66.21					38.86	1.00
	Standard error of cultivar mean	152.32	1.54	1.75					1.40	
	Coefficient of variation (%)	21.74	8.57	5.28					7.20	
	5% LSD Cultivar means (*****=ns)	*****	4.58	5.19					4.15	

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
24	Mitchell	1.25	106.75	35.00	7.50	14.78	3.00	30.50	34.1	24.2
21	Calland	1.25	139.25	25.50	8.25	15.95	3.00	57.00	35.8	23.2
14	Williams	1.25	94.50	49.30	8.00	14.85	3.50	49.50	36.6	21.5
17	James	1.50	116.50	30.25	6.50	15.88	3.00	31.50	36.6	24.7
23	Cutler 71	1.00	91.75	39.25	6.50	14.35	3.25	33.50	33.0	22.6
18	Forrest	1.00	100.25	44.00	7.00	11.90	4.00	58.00	35.6	21.6
22	Franklin	2.00	102.25	33.00	7.00	14.18	3.00	56.50	39.2	22.9
	Grand mean	1.32	107.32	36.61	7.25	14.55	3.25	45.21		
	Standard error of cultivar mean	.19	11.34	4.61	.76	.37	.15	7.89		
	Coefficient of variation (%)	28.60	21.13	25.18	20.98	5.02	9.30	34.90		
	5% LSD Cultivar means (*****=ns)	.56	*****	13.70	*****	1.09	.45	*****		

Table 189. Experiment 625, 1979

Country: PAKISTAN
Region: ASIA
Site: SW LAHORE, MULTAN RD
Cooperator(s): J. R. LOCKMAN
Latitude: 31° 19′ N
Longitude: 74° 08′ E
Zone: 5
Elevation: 225 m
Date planted: February 29, 1980
Date harvested: June 1980
Soil type: fine silt loam, alluvial
Fertilizer used (kg/ha): P 26.4, K 20.75
Amount of moisture: 431.9 mm
Number of irrigations: 7 (350 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
33	Union	2883.36	46.25	101.50	3.50		85.00		58.35	1.75
23	Cutler 71	2789.29	45.00	103.00	3.25		86.25		63.55	2.25
35	Crawford	2753.24	46.75	108.50	4.00		92.50		74.23	1.50
31	Elf	2746.89	46.25	102.75	2.75		81.25		47.20	1.00
29	Harcor	2669.17	44.75	102.25	4.00		91.25		50.90	1.00
24	Mitchell	2391.86	46.75	104.25	4.00		90.00		57.13	1.50
22	Franklin	2347.38	46.00	102.75	4.25		82.50		58.00	1.00
14	Williams	2338.10	41.00	98.00	3.75		85.00		40.75	1.00
21	Calland	2126.11	42.00	104.50	4.00		90.00		55.63	1.25
38	McCall	1975.68	42.50	93.50	3.50		92.50		40.03	1.00
28	Steele	1956.93	42.50	93.50	4.00		81.25		38.68	1.00
34	Corsoy	1811.60	41.50	98.75	4.00		87.50		38.00	1.00
32	Columbus	1792.75	45.75	111.25	4.00		91.25		71.53	1.25
27	Swift	1092.17	42.25	90.00	3.75		93.75		32.38	1.00
18	Forrest	785.38	54.00	114.00	4.00		86.25		81.58	1.00
36	Evans	705.47	41.50	95.00	4.00		91.25		28.63	1.00
	Grand mean	2072.84	44.67	101.47	3.80		87.97		52.28	1.22
	Standard error of cultivar mean	250.00	.56	.79	.29		5.06		2.72	.19
	Coefficient of variation (%)	24.12	2.50	1.56	15.25		11.51		10.40	31.63
	5% LSD Cultivar means (*****=ns)	712.11	1.59	2.25	*****		*****		7.74	.55

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
33	Union	1.00	164.25	12.30	9.83	17.00	2.00	85.00		
23	Cutler 71	1.00	167.50	13.05	8.25	16.00	2.00	85.00		
35	Crawford	1.00	138.75	16.25	7.68	14.20	2.00	75.00		
31	Elf	1.00	152.00	13.25	5.00	16.90	2.00	80.00		
29	Harcor	1.00	148.75	11.70	6.13	16.70	2.00	90.00		
24	Mitchell	1.00	127.50	14.15	6.15	14.60	2.00	80.00		
22	Franklin	1.00	159.50	15.05	7.63	15.70	2.00	78.00		
14	Williams	1.00	185.50	14.30	6.05	13.30	1.00	88.00		
21	Calland	1.00	126.75	12.35	7.48	16.70	2.00	80.00		
38	McCall	1.00	131.50	15.00	6.03	12.80	2.00	80.00		
28	Steele	1.00	132.00	12.50	7.43	15.30	1.00	90.00		
34	Corsoy	1.00	151.50	13.25	5.83	14.10	2.00	90.00		
32	Columbus	1.00	119.00	14.80	8.85	12.60	2.00	80.00		
27	Swift	1.25	119.75	12.85	5.13	11.80	2.00	85.00		
18	Forrest	1.00	149.25	12.80	11.15	6.60	5.00	5.00		
36	Evans	1.00	56.00	13.75	3.00	14.20	2.00	81.50		
	Grand mean	1.02	139.34	13.58	6.97	14.28	2.06	78.28		
	Standard error of cultivar mean	.06	20.00	1.00	.95	.22		.38		
	Coefficient of variation (%)	12.31	28.70	14.71	27.16	3.15		.96		
	5% LSD Cultivar means (*****=ns)	*****	56.96	*****	2.70	.64		1.07		

Table 190. Experiment 218, 1979

Country: TURKEY
Region: MIDDLE EAST
Latitude: 35-40° N
Longitude: 35°E
Zone: 10
Elevation: 123 m

Site: ADANA
Cooperator(s): I. ATAKISI and H. ARIOGLU

Date planted: June 1980
Date harvested: September 1980
Soil type: sand 34.3%, silt 40.2%, pH 7.5
Fertilizer used (kg/ha): N 25.0, P 25.0
Additional variety: Amsoy 71

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
21	Calland	2953.92	26.00	105.00					104.25	2.00
31	Elf	2878.08	28.00	112.00					35.55	1.25
14	Williams	2783.89	26.00	103.00					98.52	2.00
28	Steele	2773.89	20.00	99.00					76.83	2.00
68	Amsoy 71	2736.38	23.00	96.00					98.10	1.00
34	Corsoy	2726.80	21.00	113.00					71.33	1.00
29	Harcor	2703.46	23.00	113.00					74.90	1.00
23	Cutler 71	2598.44	26.00	103.00					105.45	2.00
36	Evans	2511.34	28.00	111.00					121.53	1.00
30	Hodgson	2469.24	19.00	99.00					68.12	1.00
33	Union	2416.32	26.00	105.00					111.18	3.00
24	Mitchell	2385.06	30.00	111.00					109.53	1.00
32	Columbus	2223.78	28.00	113.00					117.03	1.00
22	Franklin	2188.35	28.00	107.00					107.93	1.00
35	Crawford	1862.46	19.00	113.00					60.55	1.00
27	Swift	1598.65	22.00	87.00					67.65	1.00
38	McCall	1089.80	19.00	78.00					58.60	1.00
	Grand mean	2405.87	24.24	104.00					87.47	1.37
	Standard error of cultivar mean	170.46	.28						2.97	.06
	Coefficient of variation (%)	14.17	2.31						6.79	8.87
	5% LSD Cultivar means (*****=ns)	484.71	.80						8.45	.17

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
21	Calland	1.00	132.50	36.15	13.05	16.80	1.00	100.00		
31	Elf	1.00	173.00	33.10	5.55	18.00	3.00	100.00		
14	Williams	1.00	185.00	39.83	10.60	15.80	2.00	100.00		
28	Steele	1.00	148.50	49.48	5.40	21.70	3.00	100.00		
68	Amsoy 71	1.00	158.75	34.25	6.50	17.80	3.00	100.00		
34	Corsoy	1.00	139.25	41.08	6.48	19.60	3.00	100.00		
29	Harcor	1.00	123.25	60.68	6.10	17.50	3.00	100.00		
23	Cutler 71	1.00	136.50	40.23	14.95	17.70	1.00	100.00		
36	Evans	1.00	164.50	40.70	17.73	14.00	1.00	100.00		
30	Hodgson	1.00	155.50	40.83	7.38	18.20	2.00	100.00		
33	Union	1.00	180.50	40.13	12.55	16.90	1.00	100.00		
24	Mitchell	1.00	131.50	43.50	8.73	15.50	3.00	100.00		
32	Columbus	1.00	155.75	39.50	23.53	14.80	1.00	100.00		
22	Franklin	1.00	145.00	39.53	11.20	15.10	1.00	100.00		
35	Crawford	1.00	138.00	39.38	4.90	18.40	3.00	100.00		
27	Swift	1.00	132.00	39.25	4.78	16.50	4.00	100.00		
38	McCall	1.00	126.75	32.78	8.00	18.40	3.00	100.00		
	Grand mean	1.00	148.60	40.61	9.85	17.22	2.24	100.00		
	Standard error of cultivar mean		10.03	2.21	.77					
	Coefficient of variation (%)		13.49	10.91	15.60					
	5% LSD Cultivar means (*****=ns)		28.51	6.30	2.18					

Table 191. Experiment 650, 1979

Country: TURKEY
Region: MIDDLE EAST
Latitude: 38° 35′ N
Longitude: 27° 4′ E
Zone: 10
Elevation: 10.32 m

Site: MENEMEN-IZMIR
Cooperator(s): ZIYA KUTLU, SUAT CINSOY

Date planted: May 15, 1980
Date harvested: September 1980
Soil type: sand 36.44%, silt 50.20%, clay 13.36%, pH 7.45
Fertilizer used (kg/ha): N 25, P 26
Amount of moisture: 382.7 mm
Number of irrigations: 3

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
29	Harcor	3463.85	50.00	124.00					119.65	3.00
21	Calland	3271.14	50.00	136.50					126.90	3.25
14	Williams	3130.87	55.75	134.00					123.35	2.00
34	Corsoy	3058.07	50.00	124.00					114.25	2.00
38	McCall	2862.23	39.00	110.00					64.90	1.00
23	Cutler 71	2824.99	56.00	136.50					137.15	3.50
24	Mitchell	2794.27	56.00	139.25					125.65	2.75
22	Franklin	2641.66	56.00	137.25					135.10	3.25
31	Elf	2436.45	52.75	135.75					52.05	1.00
36	Evans	2414.06	43.00	125.00					66.55	1.00
27	Swift	2385.93	44.75	114.00					91.90	1.00
33	Union	2345.57	56.00	131.75					124.00	1.25
30	Hodgson	2267.44	43.00	117.00					78.85	1.00
35	Crawford	2045.83	61.00	143.25					133.13	2.00
28	Steele	2024.47	50.25	116.75					91.10	1.00
32	Columbus	1988.02	60.75	148.50					138.70	2.75
	Grand mean	2622.18	51.52	129.59					107.70	1.98
	Standard error of cultivar mean	222.05	1.96	1.19					5.96	.38
	Coefficient of variation (%)	16.94	7.59	1.83					11.07	38.36
	5% LSD Cultivar means (*****=ns)	632.49	5.57	3.38					16.97	1.08

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
29	Harcor	1.00	110.00	78.00	12.85				33.1	22.9
21	Calland	1.00	101.25	49.75	24.70				37.9	21.8
14	Williams	1.00	92.50	55.40	20.55				40.0	21.9
34	Corsoy	1.00	112.00	61.50	13.40				31.7	25.2
38	McCall	1.00	105.00	47.80	9.80				32.9	25.0
23	Cutler 71	1.00	89.00	55.35	27.70				36.8	22.2
24	Mitchell	1.00	89.00	50.60	25.75				34.3	24.0
22	Franklin	1.00	97.25	52.40	23.70				35.4	19.5
31	Elf	1.00	97.50	45.88	11.30				37.3	21.9
36	Evans	1.00	91.25	68.90	8.15				32.1	25.0
27	Swift	1.00	83.50	56.65	11.45				33.4	24.9
33	Union	1.00	88.25	46.00	23.85				37.5	22.7
30	Hodgson	1.00	107.50	42.75	12.90				31.5	25.6
35	Crawford	1.00	103.50	36.90	29.43				38.7	21.1
28	Steele	1.00	98.25	40.95	15.75				33.6	23.6
32	Columbus	1.00	83.00	44.40	26.50				37.6	21.8
	Grand mean	1.00	96.80	52.08	18.61					
	Standard error of cultivar mean		8.64	5.67	1.96					
	Coefficient of variation (%)		17.86	21.77	21.11					
	5% LSD Cultivar means (*****=ns)		*****	16.15	5.60					

Table 192. Experiment 651, 1979

Country: TURKEY
Region: MIDDLE EAST
Latitude: 38° 25′ N
Longitude: 27° 5′ E
Zone: 10
Elevation: 20 m

Site: MENEMEN IZMIR
Cooperator(s): ZIYA KUTLU, SUAT CINSOY

Date planted: May 13, 1982
Date harvested: September 1982
Fertilizer used (kg/ha): N 3.0, P 6.0
Amount of moisture: 457.5 mm
Number of irrigations: 4 (400 mm)

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
67	Woodworth	4208.25	35.00	121.50					99.45	1.00
14	Williams	3833.22	42.00	131.75					102.90	1.00
21	Calland	3708.22	68.75	133.50					101.90	1.00
31	Elf	3546.77	39.25	141.50					42.10	1.00
61	Cumberland	3333.22	38.00	131.50					93.80	1.00
33	Union	3093.67	46.00	135.75					105.05	1.00
29	Harcor	3046.77	38.00	113.00					92.90	1.25
34	Corsoy	2953.05	35.00	113.00					90.50	1.00
24	Mitchell	2822.82	47.50	140.25					111.45	1.00
23	Cutler 71	2692.60	42.00	135.75					111.15	1.00
68	Amsoy 71	2591.07	38.00	121.50					113.95	1.00
36	Evans	2552.00	48.00	139.50					129.95	1.25
27	Swift	2359.25	50.00	174.50					106.10	1.50
22	Franklin	2218.70	34.50	103.00					88.70	.75
28	Steele	1919.20	35.00	114.25					78.95	1.00
30	Hodgson	1249.95	35.00	109.75					73.50	1.00
	Grand mean	2883.05	42.00	128.75					96.40	1.05
	Standard error of cultivar mean	234.07	6.21						6.39	.08
	Coefficient of variation (%)	16.24	29.55						13.26	15.62
	5% LSD Cultivar means (*****=ns)	666.72	17.68						18.20	.23

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
67	Woodworth	1.00	152.00	57.35	13.75	18.00	1.00	73.00		
14	Williams	1.25	153.00	35.35	13.85	19.00	1.00	86.00		
21	Calland	1.00	198.75	31.25	21.55	19.00	2.00	83.00		
31	Elf	1.00	161.75	33.10	8.70	17.90	1.00	81.50		
61	Cumberland	1.00	195.50	29.10	14.55	21.70	1.00	80.00		
33	Union	1.00	182.75	29.85	13.70	17.70	1.00	83.00		
29	Harcor	1.00	177.50	43.00	9.50	18.80	2.00	59.00		
34	Corsoy	1.00	204.00	25.85	12.15	20.00	2.00	87.00		
24	Mitchell	1.00	143.50	46.25	20.35	17.00	1.00	72.00		
23	Cutler 71	1.00	141.75	45.70	16.80	20.53	1.25	85.25		
68	Amsoy 71	1.25	197.25	30.30	18.75	18.00	2.00	88.00		
36	Evans	1.00	202.00	34.05	20.45	16.50	1.00	95.00		
27	Swift	2.75	206.75	26.25	16.25	20.83	2.25	61.25		
22	Franklin	.75	121.75	28.90	12.00	11.48	.75	54.75		
28	Steele	1.00	201.25	24.35	15.60	18.00	2.00	73.00		
30	Hodgson	1.50	181.00	19.65	12.45	20.05	1.75	65.75		
	Grand mean	1.16	176.28	33.77	15.03	18.40	1.44	76.72		
	Standard error of cultivar mean	.15	7.91	3.96	1.59			3.95		
	Coefficient of variation (%)	25.58	8.97	23.42	21.15			10.30		
	5% LSD Cultivar means (*****=ns)	.42	22.53	11.27	4.53			11.25		

Table 193. Experiment 84, 1979

Country: VIETNAM
Region: ASIA
Latitude: 10° 2′ N
Longitude: 105° 47′ E
Zone: 1
Elevation: 2.0 m

Site: EXPER.FARM STN. UNIV. OF CANTHO
Cooperator(s): VO-TONG XUAN and TRAN THUONG TUAN

Date planted: April 16, 1980
Date harvested: July 1980
Soil type: alluvial, sand 8.8%, silt 48.0%, clay 43.2%, pH 5.2
Fertilizer used (kg/ha): N 25, P 60, K 30
Amount of moisture: 739.7 mm
Substitute cultivar: MTD 6

Entry Number	Cultivar	Yield (kg/ha)	Days to Flower	Days to Maturity	Nodule Abund. 1	Nodule Abund. 2	Nodule Act. 1	Nodule Act. 2	Plant Ht. (cm)	Lodging
14	Williams	2327.25	26.00	90.00	4.25	1.75	90.00	43.75	88.50	2.00
15	Ransom	2145.75	29.00	92.00	3.75	2.00	85.00	45.00	32.75	1.00
7	ICA Tunia	2101.50	33.00	100.00	4.25	3.75	77.50	12.50	96.00	2.00
13	Bossier	1872.25	43.00	106.00	3.75	2.00	83.75	26.25	91.50	3.25
3	SJ-2	1731.00	36.00	100.00	4.25	3.75	85.00	6.25	118.50	5.00
16	Cobb	1690.00	29.00	95.00	4.00	2.50	87.50	35.75	42.50	1.00
19	Davis	1549.00	30.00	85.00	4.00	1.25	86.25	71.25	39.00	1.00
10	Improved Pelican	1441.00	36.00	100.00	4.50	3.50	83.75	35.00	121.50	3.00
6	IAC-2	1379.25	36.00	110.00	4.25	3.75	80.00	42.50	138.50	4.50
7084	MTD 6	1335.50	37.00	93.00	2.00	2.00	86.25	27.50	109.25	5.00
5	Orba	1117.75	35.00	106.00	3.25	1.25	65.00	35.00	138.75	5.00
4	Hardee LS	1099.75	52.00	117.00	3.75	2.00	76.25	12.50	112.75	4.25
1	CH-3	1003.75	36.00	110.00	4.50	4.00	82.50	38.75	132.75	5.00
9	Jupiter	385.75	47.00	110.00	4.25		85.00		69.25	1.00
	Grand mean	1512.82	36.07	101.00	3.91	2.39	82.41	30.86	95.11	3.07
	Standard error of cultivar mean	185.79			.27	.29	4.46	4.33	2.23	.22
	Coefficient of variation (%)	24.56			13.92	24.13	10.83	28.06	4.69	14.41
	5% LSD Cultivar means (*****=ns)	531.46			.78	.83	*****	12.38	6.38	.63

Entry Number	Cultivar	Shattering	Plants Harvested	Pods/ Plant	Pod Ht. (cm)	100 Seed Wt. (g)	Quality of Seed	Percent Germ.	Percent Protein	Percent Oil
14	Williams		80.75	36.75	7.80	15.00	2.00	95.00	40.3	23.7
15	Ransom		72.00	40.25	4.90	12.25	2.00	96.00	39.1	25.4
7	ICA Tunia		82.50	45.25	11.98	12.58	2.00	83.50	42.5	21.6
13	Bossier		69.75	53.75	18.70	9.80	3.00	82.00	43.7	19.2
3	SJ-2		82.75	52.00	10.23	10.48	2.00	95.00	41.6	21.4
16	Cobb		90.75	42.50	5.80	13.25	2.00	96.00	40.8	24.0
19	Davis		73.25	49.25	4.65	11.10	2.00	75.00	42.1	22.4
10	Improved Pelican		91.75	54.25	18.20	9.80	2.00	80.00	42.5	18.6
6	IAC-2		65.25	63.25	19.63	10.53	3.00	85.00	44.2	21.1
7084	MTD 6		73.50	33.50	10.03	9.95	2.00	98.00	42.1	15.8
5	Orba		61.25	48.25	10.25	9.98	4.00	84.00	44.5	16.9
4	Hardee LS		44.50	70.50	8.25	8.93	4.00	86.00	44.1	20.9
1	CH-3		64.25	52.50	21.33	11.73	3.00	92.00	46.7	17.1
9	Jupiter		53.75	36.75	14.75	8.83	3.00	55.00	45.8	15.6
	Grand mean		71.86	48.48	11.89	11.01	2.57	85.89		
	Standard error of cultivar mean		7.56	5.77	2.02	.41		3.34		
	Coefficient of variation (%)		21.04	23.80	34.01	7.36		7.78		
	5% LSD Cultivar means (*****=ns)		21.63	16.50	5.78	1.16		9.56		

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